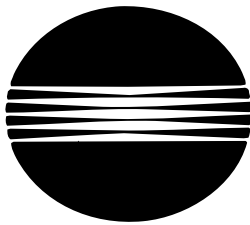


Di750

SERVICE MANUAL

[GENERAL]



MINOLTA

There are using both Official Options name and Popular Options name in the Di750 Service Manual and Option Service Manual.

| Official Options name | : | Popular Options name |
|-----------------------|---|----------------------|
|-----------------------|---|----------------------|

| | | |
|-------|---|------|
| EDH-2 | : | RADF |
|-------|---|------|

| | | |
|--------|---|-----|
| FN-104 | : | FNS |
|--------|---|-----|

| | | |
|------|---|-----|
| FN-4 | : | FNS |
|------|---|-----|

| | | |
|------------------|---|----|
| Cover Inserter A | : | PI |
|------------------|---|----|

| | | |
|------------------|---|-----|
| In-System Writer | : | ISW |
|------------------|---|-----|

| | | |
|--------------|---|------------|
| C-305/C-305L | : | LT and LCT |
|--------------|---|------------|

| | | |
|-------|---|----|
| TMG-1 | : | TU |
|-------|---|----|

| | | |
|-----|---|-----|
| HDD | : | HDD |
|-----|---|-----|

(Hard Disk Drive)

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SAFETY AND IMPORTANT WARNING ITEMS




Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Changes may have been made to this copier to improve its performance after this Service Manual was printed. Accordingly, Minolta Corporation, makes no representations or warranties, either expressed or implied, that the information contained in this Service Manual is complete or accurate. It is understood that the user of this Service Manual must assume all risks or personal injury and/or damage to the copier while servicing the copier for which this Service Manual is intended. Therefore, this Service Manual must be read carefully before doing service work both in the course of the technical training and even after that, for keeping the correct maintenance and control of the copier. Keep this Service Manual also for the future service. When it is impossible to read the description about safety and warning (due to contamination or tear), the relevant page should be replaced.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Handbook, each of three expressions, “ DANGER”, “ WARNING” and “ CAUTION” is defined as follows together with a symbol mark to be used in a limited meaning. When servicing, the relevant works (disassembling, assembling, adjustment, repair and maintenance) need to be conducted with utmost care.

- | | |
|---|---|
|  DANGER: | Actions having a high possibility of suffering death or serious wound |
|  WARNING: | Actions having a possibility of suffering death or serious wound |
|  CAUTION: | Actions having a possibility of suffering a slight wound, medium trouble and material damage |

SAFETY WARNINGS

[1] MODIFICATIONS NOT AUTHORIZED BY Minolta

Minolta copiers are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.

Photocopier design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degrading performance and safety. Such modifications are therefore strictly prohibited. The points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

PROHIBITED ACTIONS :

- (1) Using extension cables or a different power cord than specified by Minolta.
- (2) Using other fuses than specified by Minolta. Safety will not be assured, leading to a risk of fire and injury.
- (3) Disabling fuses or bridging fuse terminals with wire, metal clips, solder or similar. (This applies also to thermal fuses.)
- (4) Removing air filters (except for replacement).
- (5) Disabling relay functions (such as wedging paper between relay contacts, etc.).
- (6) Disabling safety functions (interlocks, safety circuits, etc.). Safety will not be assured, leading to a risk of fire and injury.
- (7) Performing actions to copier not described in the instruction manual or the service handbook.
- (8) Using parts other than specified by Minolta.

[2] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

Minolta copiers are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the customer engineer must perform regular safety checks.

1. Advance Preparation for Safety Checks

CAUTION:

- (1) Wear clothing that facilitates work and is designed for safety.
- (2) Carry out all procedures carefully to prevent injury.
- (3) Be sure to disconnect the power cord of the copier and all optional equipment from the AC outlet. Simply turning off the power switch is not sufficient, because paper feed units or other electrical equipment may be powered also when the power switch is turned off.
- (4) Proceed with special care when performing operation checks or adjustment while the unit is powered. When carrying out operation checks or adjustment while external covers are removed, the risk of electrical shock exists when touching parts which carry high voltage or electrical charge. The risk of injury exists when touching moving parts such as gears or chains.

2. Safety Checkpoints

The following list is not exhaustive, but it includes actions which must be carried out at every on-site service.

CAUTION:

- (1) Check external covers and the frame for sharp edges, burrs, or nicks.
- (2) Check external covers and hinges for loosening or damage.
- (3) Check wiring for squeezing or damage.
- (4) Check power cord for insulation problems (conductor must not be exposed).
- (5) Check power cord and cable ties etc. for loosening from frame.

WARNING:

- (1) Verify that the copier is properly grounded. If a problem is detected, establish a proper ground connection.
- (2) Connecting the ground lead to an improper point such as listed below results in a risk of explosion and electric shock.

Unsuitable ground points:

- Gas pipe
- Lightning rod
- Telephone line ground
- Plastic water pipe or water pipe or faucet that has not been approved by authorities for grounding use

3. Description of Safety Checks

CAUTION:

- (1) Before performing safety check work, read all relevant documentation (Service Manual, technical notices, etc.) and proceed according to the prescribed procedure, using only the prescribed tools. Do not carry out any adjustments not described in the documentation.
- (2) If the power cord is damaged, replace it only with the specified power cord. If the power cord insulation has been damaged and there are exposed sections, short-circuits and overheating may occur, leading to a serious fire risk.
- (3) Do not route the power cord so that it can be stepped on or pinched. Otherwise overheating may occur, leading to a serious fire risk.
- (4) When disconnecting any cables, always grasp the connector and not the cable (especially in the case of AC and high-voltage leads).
- (5) Carefully remove all toner remnants from electrical parts, electrodes, etc.
- (6) Make sure that wiring cannot come into contact with sharp edges, burrs, or other pointed parts.
- (7) Double-check to make sure that all screws, components, wiring, connectors, etc. that were removed for safety check maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)
- (8) When installation and preventive maintenance, verify that the power cord has been securely plugged into the AC outlet. Contact problems may lead to increased resistance, overheating, and the risk of fire.


WARNING:

- (1) Before disassembling or adjusting the write unit or any parts that use a laser, make sure that the power cord has been disconnected.
- (2) Do not remove the main cover of the write unit. Direct exposure of the eye to laser beams may lead to blindness.
- (3) Do not turn the copier on while the write unit is not installed in its normal position.
- (4) Danger of explosion if battery is incorrectly replaced, replace only with the same or equivalent recommended by the manufacturer. Discard used batteries according to the manufacture's instructions.


VORSICHT:

- (4) Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

[3] HANDLING OF MATERIALS FOR SERVICING

-  CAUTION: Drum cleaner (alcohol-based) and roller cleaner (acetone-based) are highly flammable and must be handled with care. When using these materials for cleaning of copier parts, observe the following precautions.

- (1) Disconnect the power cord from the AC outlet.
- (2) Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
- (3) Perform cleaning only in an environment where sufficient ventilation is assured. Breathing large quantities of organic solvents can lead to discomfort.
- (4) Do not replace the cover or turn the unit on before any solvent remnants on the cleaned parts have fully evaporated.

-  CAUTION: Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes etc. It may be stimulative. If the substances get in the eye, rinse it with plenty of water immediately. When symptoms are noticeable, consult a physician.

[4] CONCLUSION

- (1) Safety of users and customer engineers depends highly on accurate maintenance and administration. Therefore, safety can be maintained by the appropriate by the proper daily service work conducted by the customer engineer.
- (2) When performing service, each copier on the site must be tested for safety. The customer engineer must verify the safety of parts and ensure appropriate management of the equipment.

SAFETY INFORMATION

IMPORTANT INFORMATION

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States.

This copier is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this copier is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

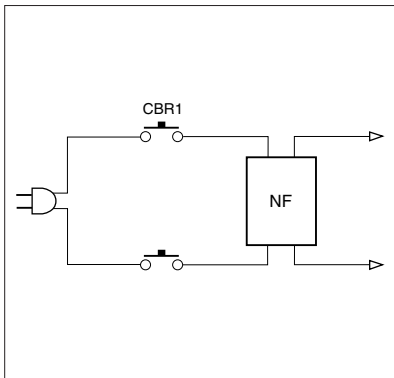
SAFETY CIRCUITS

This machine is provided with the following safety circuits to prevent machine faults from resulting in serious accidents.

- [1] Overall protection circuit
- [2] L2, L3, and L4 (fixing heater lamps) overheating prevention circuit

These safety circuits are described below to provide the service engineer with a renewed awareness of them in order to prevent servicing errors that may impair their functions.

[1] Overall Protection Circuit

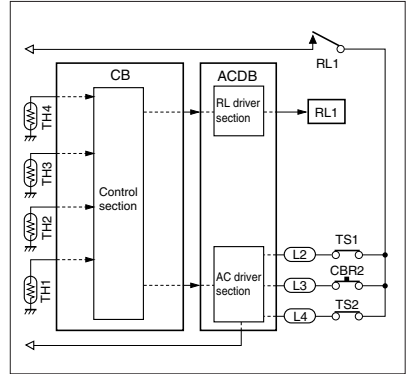


1. Protection by CBR1 (circuit breaker 1)

The CBR1 interrupts the AC line instantaneously when an excessive current flows due to a short in the AC line.

⚠ Caution: The CBR1 function must not be deactivated under any circumstances.

[2] Protection by L2, L3, and L4 (fixing heaters) overheating prevention circuit




1. Protection by software

The output voltage from TH1 (fixing temperature sensor 1) is read by the CPU. If this voltage is abnormal, L2 (fixing heater lamp 1), L3 (fixing heater lamp 2), and L4 (fixing heater lamp 3), and RL1 (main relay) are turned OFF.

⚠ Caution: Do not change the gap between the roller and TH1. When replacing TH1, check the specified mounting dimensions.
The RL1 function must not be deactivated under any circumstances.


2. Protection by the hardware circuit

The output voltages from TH1 and TH2 (fixing temperature sensor 2), TH3 (fixing temperature sensor 3), and TH4 (fixing temperature sensor 4) are compared with the abnormality judgement reference value in the comparator circuit. If the output voltage from TH1, TH2, TH3, or TH4 exceeds the reference value, L2, L3, L4, and RL1 are turned off in hardware means.

 **Caution:** Periodically check the TH2 and TH4 faces contacting the roller, and replace TH2 and/or TH4 if any abnormality is detected.
Do not change the gap between the roller and each sensor TH2 and TH4. When replacing TH2 or TH4, check the specified mounting dimensions.
The RL1 function must not be deactivated under any circumstances.


3. Protection by TS1 (thermostat (upper)) and TS2 (thermostat (lower))

TS1 is turned off when the temperature of the fixing roller (upper) exceeds the specified value, and TS2 is turned off when the temperature of the heating (upper) roller exceeds the specified value, thus interrupting the power to L2 and L4 directly.

 **Caution:** Do not use any other electrical conductor in place of TS1 and TS2.

4. Protection by CBR2 (circuit breaker 2)

The CBR2 interrupts the AC line for L3 instantaneously when an excessive current flows due to a short in the AC line.

 **Caution:** The CBR2 function must not be deactivated under any circumstances.

HANDLING OF THE PC DRUM

During Transportation/Storage:

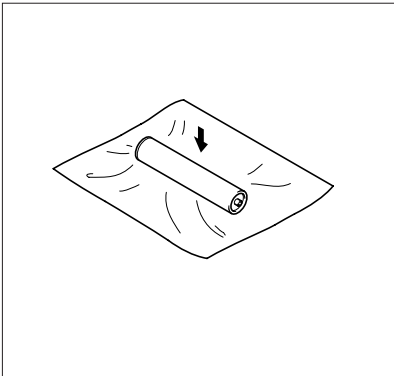
- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between -20°C and $+40^{\circ}\text{C}$.
- In summer, avoid leaving the PC Drum in a car for a long time.

Handling:

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its container or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.

1. Place the PC Drum on the Drum Cloth.

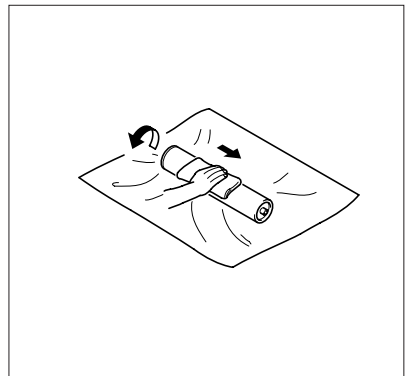


2. Gently wipe the residual toner off the surface of the PC Drum with a dry, dust-free cotton pad.

- A. Rotate the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.

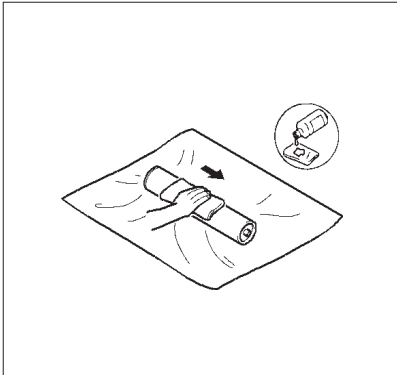
- B. Rotate the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the dust-free cotton pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

* At this time, always use a CLEAN face of the dry dust-free cotton pad until no toner is evident on the face of the Pad after wiping.

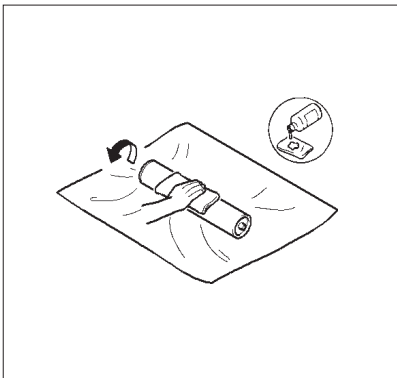


3. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused dust-free cotton pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

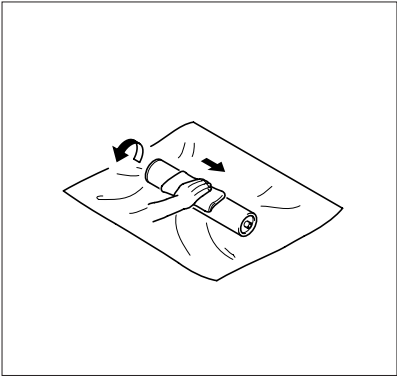
* Never move the pad back and forth.



4. Using the SAME face of the pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.



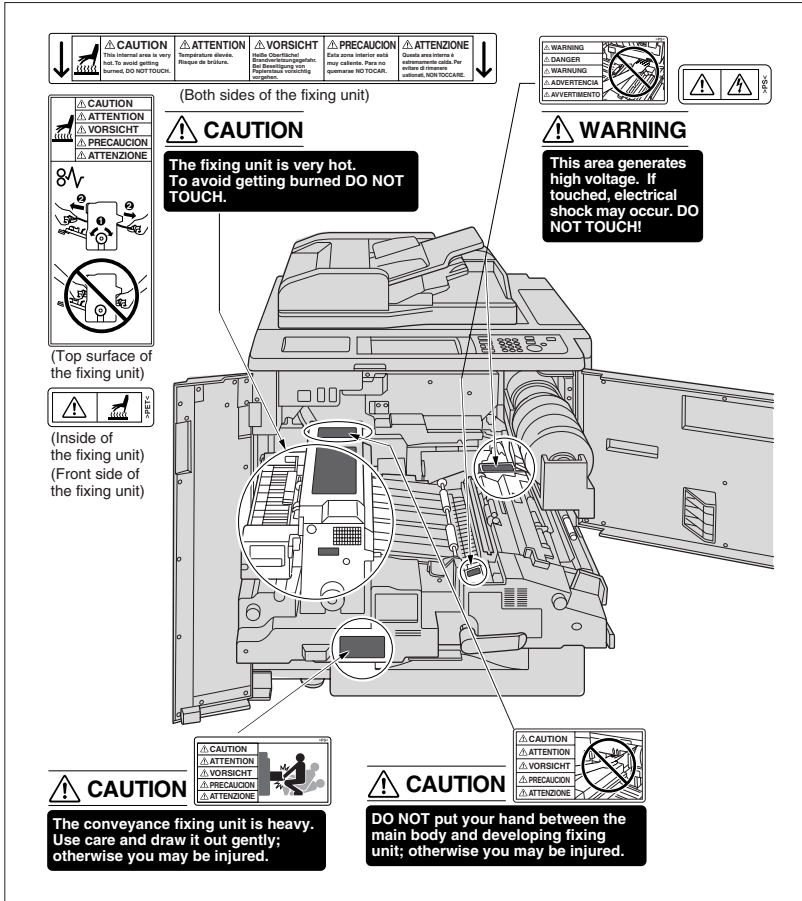
5. Finally, gently wipe the entire surface of the PC Drum.



INDICATION OF WARNING ON THE MACHINE

Caution labels shown below are attached in some areas on/in the machine areas.

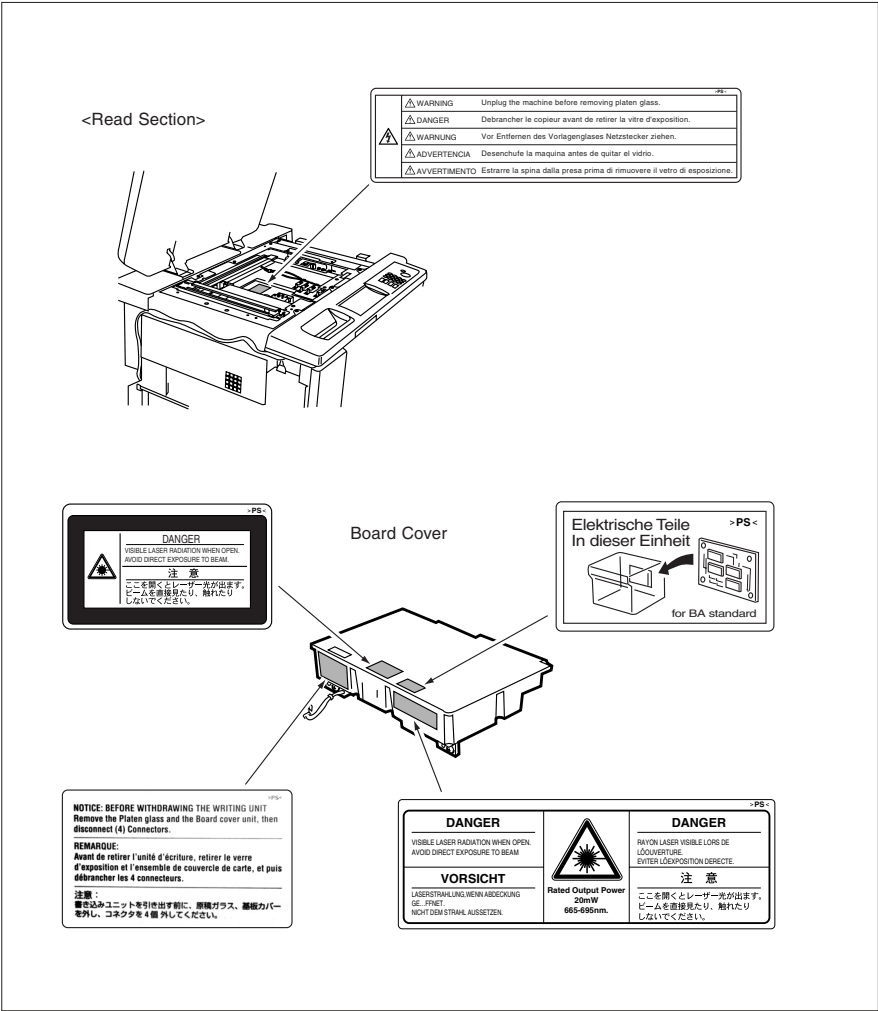
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and shock hazards.



⚠ Caution:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from.

Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.



CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from.
Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type
recommended by the manufacturer.

Dispose of used batteries according
to the manufacturer's instructions.

Germany only

VORSICHT!

Explosionsgefahr bei unsachgemäßen austausch der
batterie. Ersatz nur durch denselben oder einen vom hersteller
empfohlenen ähnlichen typ. Entsorgung gebrauchter batterien
nach angaben des herstellers.

Denmark only

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering

Udskiftning må kun ske med batteri
af samme fabrikat og type.

Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.

Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.

Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

Sweden only

VARNING

Explosionsfara vid felaktigt batteribyte.

Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.

Kassera använt batteri enligt fabrikantens
instruktion.

Finland only

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.

Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

ALL Areas

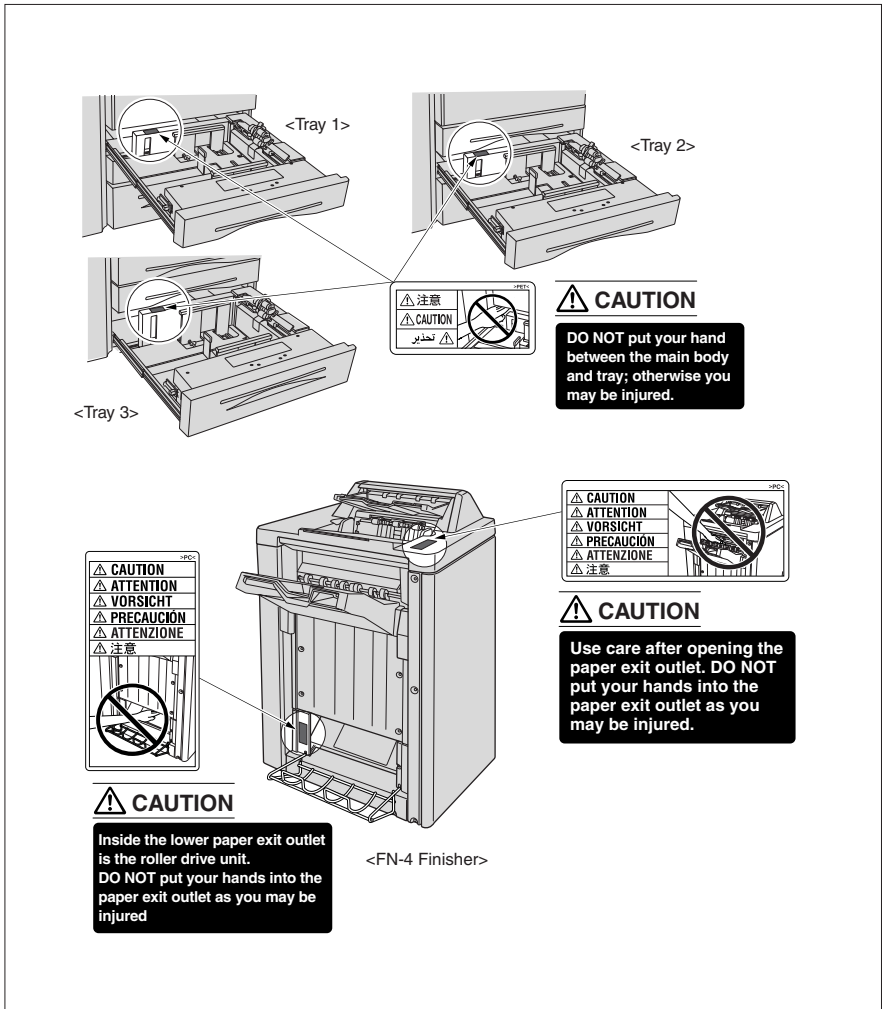
CAUTION

"Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used IC Package according to the manufacturer's instructions."

Germany only

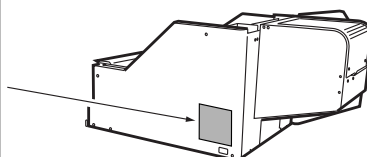
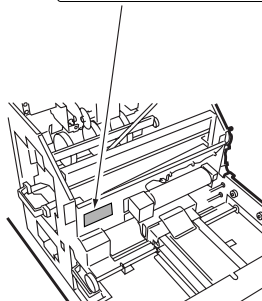
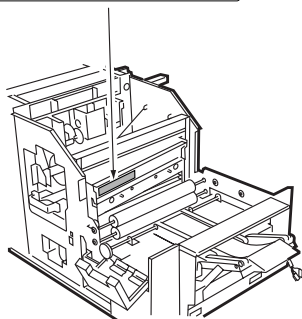
VORSICHT!

⇒ "Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen
typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.



⚠ CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.



<TMG-1 Trimmer>

⚠ CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from.

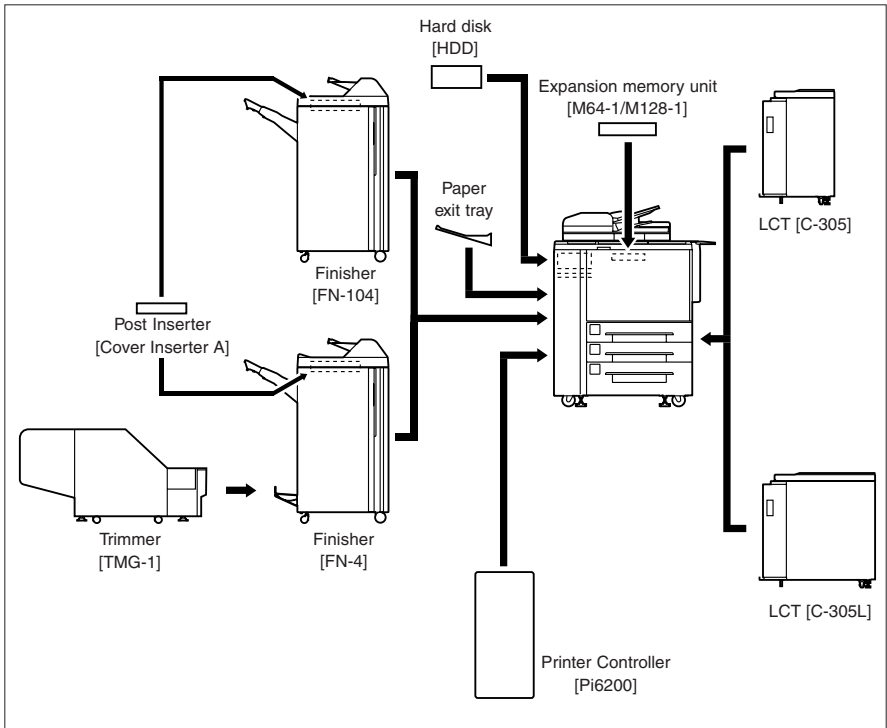
Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.



OUTLINE

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OUTLINE OF SYSTEM



Di750 PRODUCT SPECIFICATIONS

[1] Type

Installation Type:

Console type (floor-mounted type)

Copying method:

Indirect electrostatic method

Document tray type:

Fixed

Photosensitive material:

OPC

Sensitizing method:

Laser writing

Paper feed trays:

Three stacked trays (two for 500 sheets of 80 g/m² or 20lbs. paper; one for 1000 sheets of 80 g/m² or 20lbs. paper)

A by-pass tray for various paper sizes (150 sheets of 80 g/m² or 20lbs. paper)

LCT (4000 sheets of 80 g/m² or 20lbs. paper)*1

*1: Optional

[2] Functions

Applicable document types:

Sheets, book, solid object

Document size:

A3 (11x17) max.

Copy paper size:

A3 to A5

11x17 to 8.5x11, F4

Wide paper (max. 314x445mm)

Magnifications

Fixed magnifications:

Metric Area

x1.00, x2.00, x1.41, x1.22, x1.15, x0.86, x0.82, x0.71, x0.50

Inch Area

x1.00, x4.00, x2.00, x1.55, x1.29, x0.77, x0.65, x0.50

Special ratio magnifications:

3 modes

Vertical magnifications:

x0.33 to x4.00 (400 dpi, in 1% steps)

x0.33 to x2.00 (600 dpi, in 1% steps)

Horizontal magnifications:

x0.33 to x4.00 (400 dpi, in 1% steps)

x0.33 to x2.00 (600 dpi, in 1% steps)

Warm-up time:

Less than 6 minutes*2

*2: 6 minutes is the machine for the 230VAC specification.

Warm-up time differs depending on the Power source (voltage).

First copy out time:

3.9 seconds or less (for A4 or 8.5 x11, manual copy density selection, straight paper ejection with the copied image facing up, platen mode, life size, paper feed from tray 1)

Continuous copy speed (life size, copies/min):

| Size | cpm |
|--------|-----|
| A4 | 75 |
| 8.5x11 | |

Continuous copy count:

1 to 9999

Copy density selections:

AE, manual

Arbitrary density (2 modes)

E-RDH memory capacity:

standard 64MB

maximum 512MB

Special functions:

Interleaves, chapter, combination (2 in 1, 4 in 1, 8 in 1), booklet, OHP interleave, image insertion, book copy, automatic tray selection for mixed sized document, special document (text, photo, pencil), reversed image, repeated copy, frame/fold erase, auto layout, thin/thick paper, shift/reduction shift, non-image area erase, memory copy, density monitoring, single step copy, density shift, printing function, copy reservation, image rotation, weekly timer, job memory, interrupts, auto power save, auto reset, auto shutoff, SDF function, EKC.

[3] Applicable Copy Paper

Plain paper:

High quality paper 60 g/m² to 90 g/m² (17 to 24 lbs.)

Special paper (bypass feed only):

Tabs

OHP film

Blueprint master paper

Recycled paper

(tray feed only)

High quality plain paper

(50 g/m² to 59 g/m², 91 g/m² to 200 g/m²)

(13 lbs. to 16 lbs., 24 lbs. to 53 lbs.)

[4] Options

Finisher: FN-104/FN-4

LCT: C-305/C-305L

Expantion memory unit:

M64-1: 64MB

M128-1: 128MB

Post inserter: Cover Inserter A

Hard disk: HDD

Printer Controller: Pi6200

Trimmer: TMG-1

Paper exit tray

[5] Particulars of Machine

Power supply:

230 VAC -14% to 10.6%

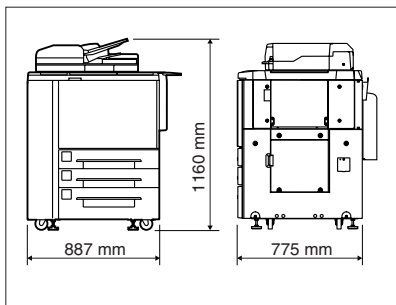
50 Hz/60 Hz

Power consumption:

3450W max.

(Full option)

Weight: Approx. 280 kg (617 lbs.)

Machine dimensions:

[6] Maintenance and Life

Periodic maintenance:

Every 250,000 copies

Machine life:

30,000,000 copies or 5 years

[7] Consumables

Developer: Exclusively for Minolta Di750

Toner : Exclusively for Minolta Di750

Drum: Exclusively for Minolta Di750 (ø100)

[8] Environmental Conditions

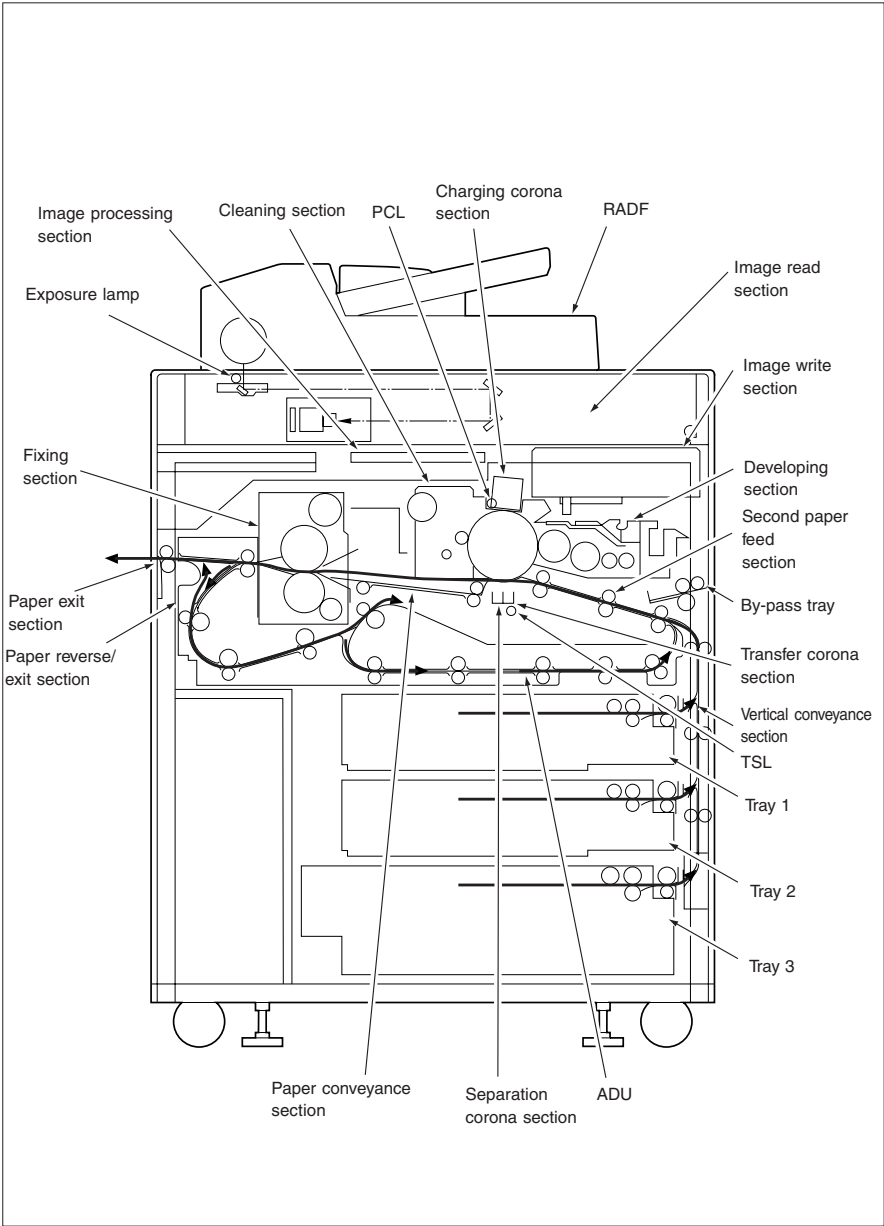
Temperature:

10°C to 30°C (50°F to 86°F)

Humidity: 10% to 80% RH

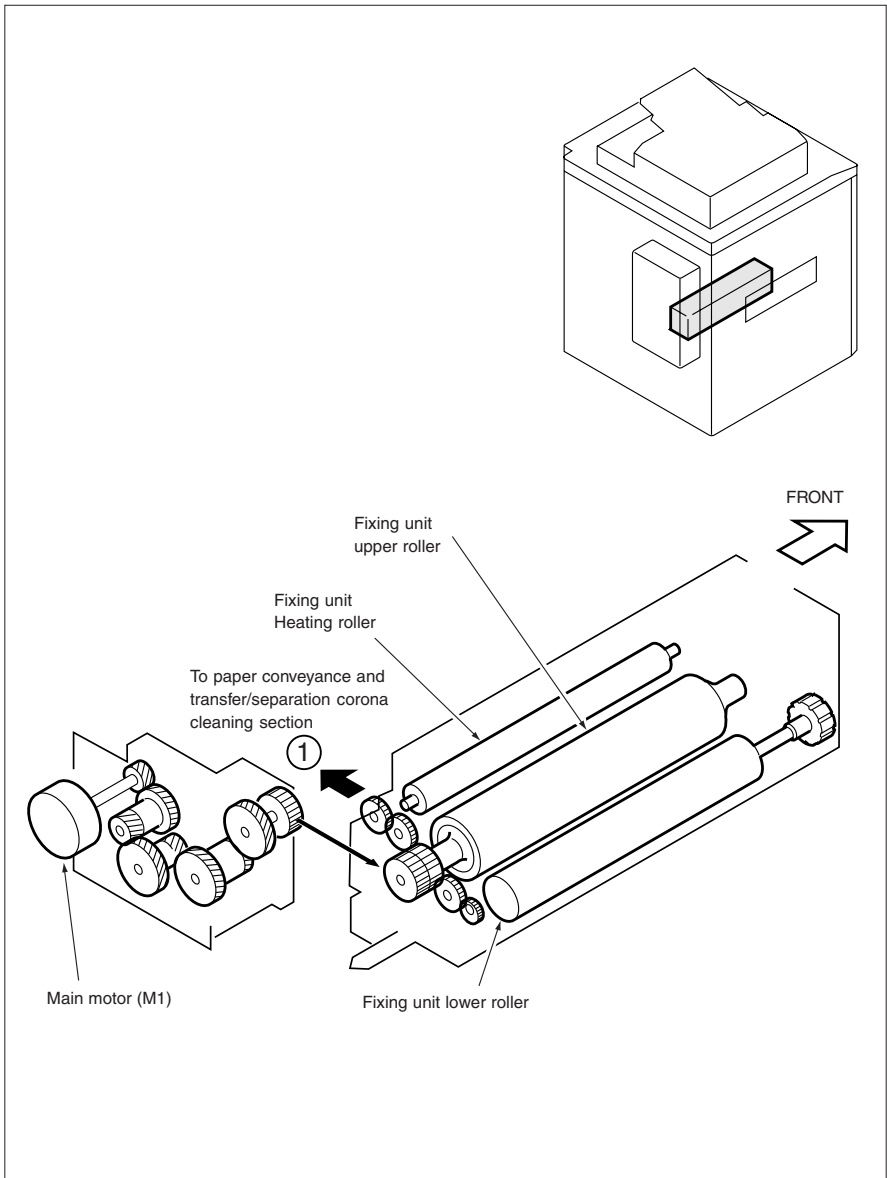
Note: The information herein may subject to change for improvement without notice.

CENTER CROSS-SECTIONAL VIEW

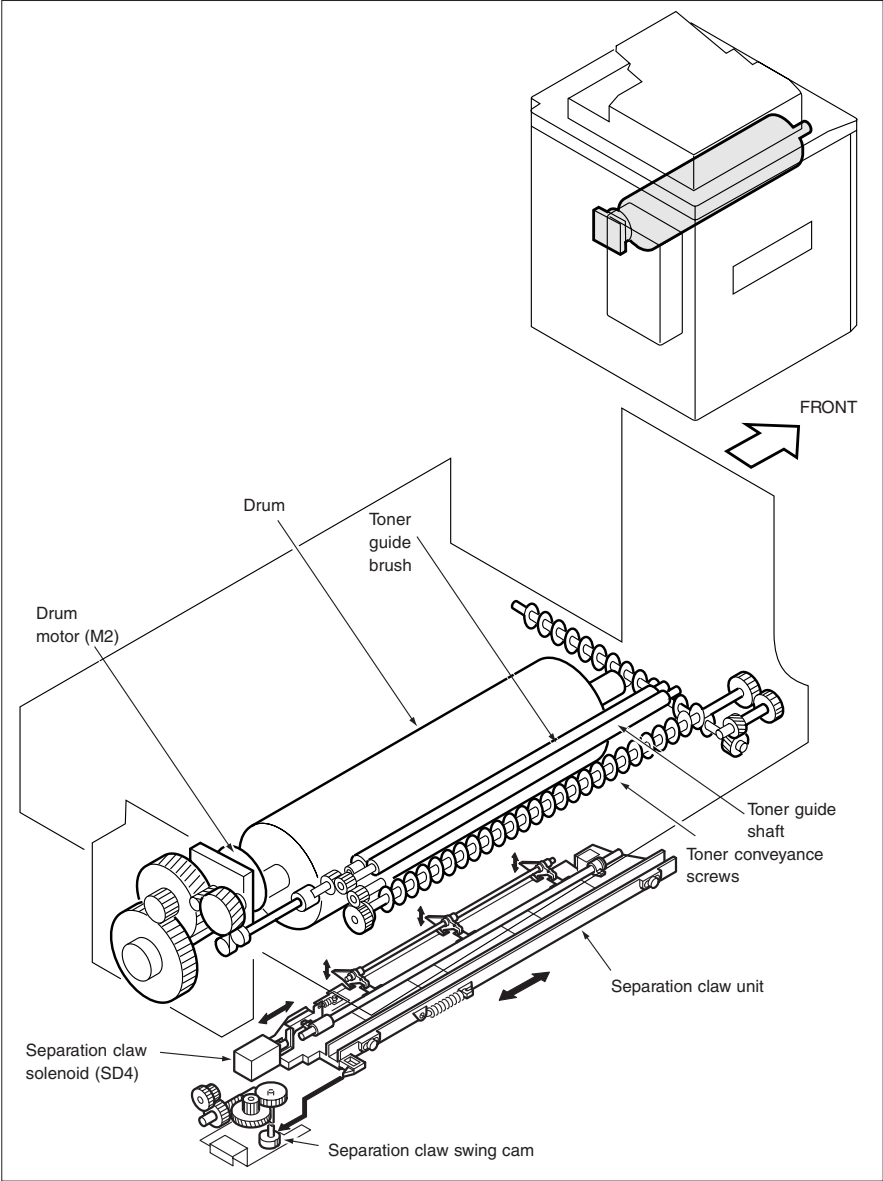


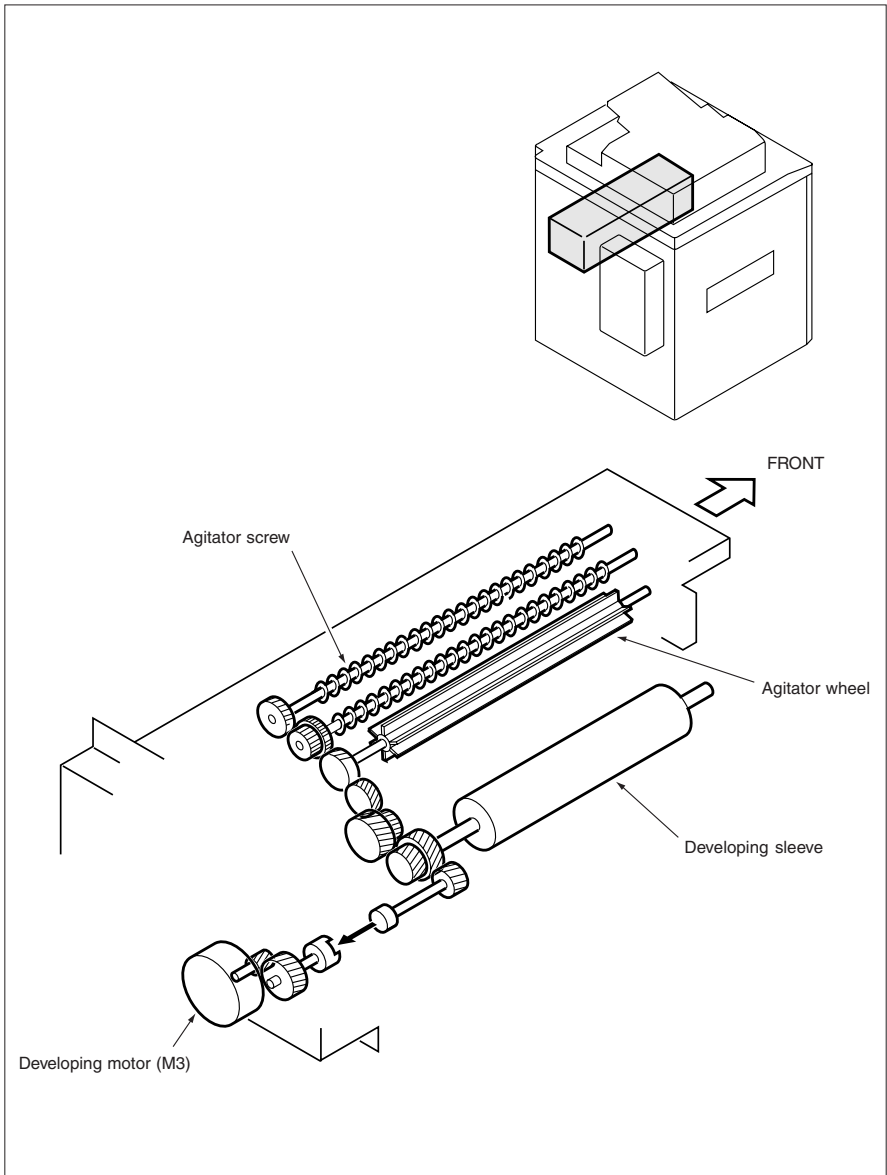
DRIVE SYSTEM DIAGRAM

[1] Main Drive Section

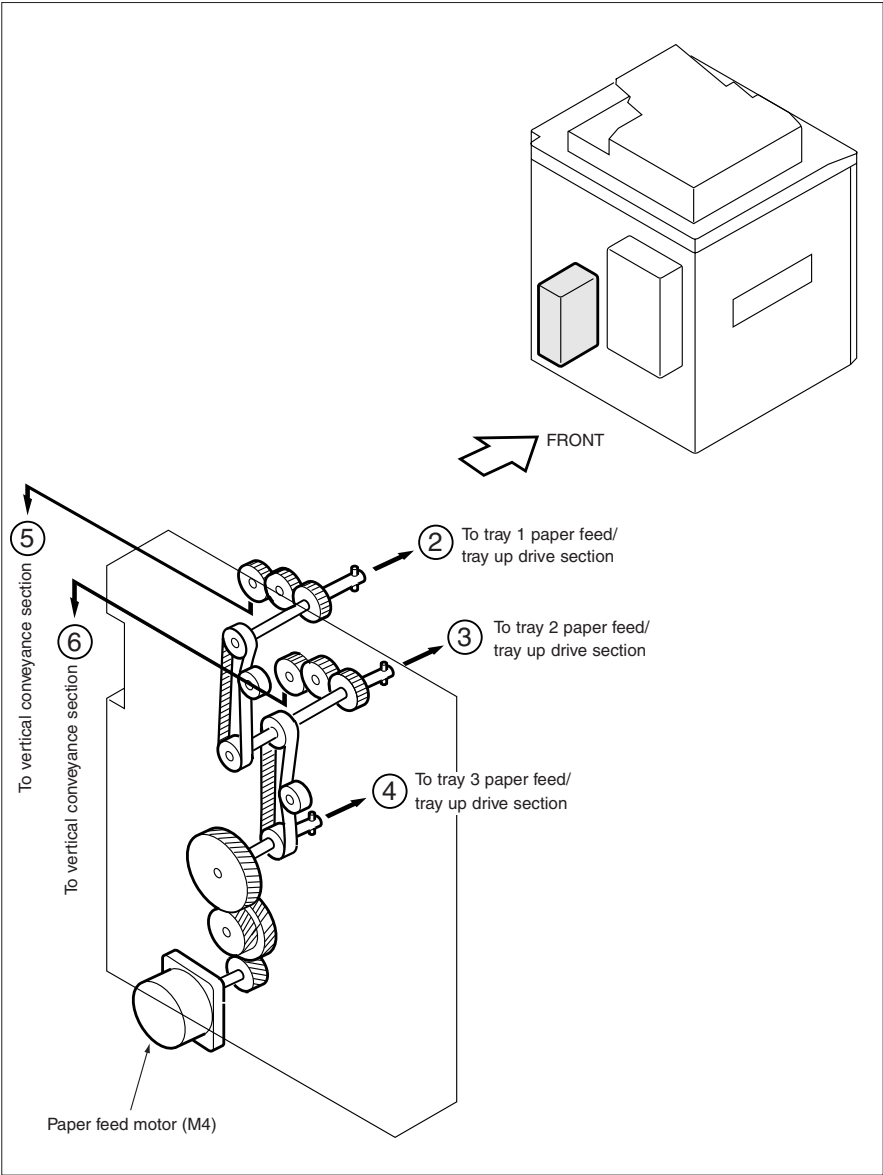


[2] Drum Drive Section

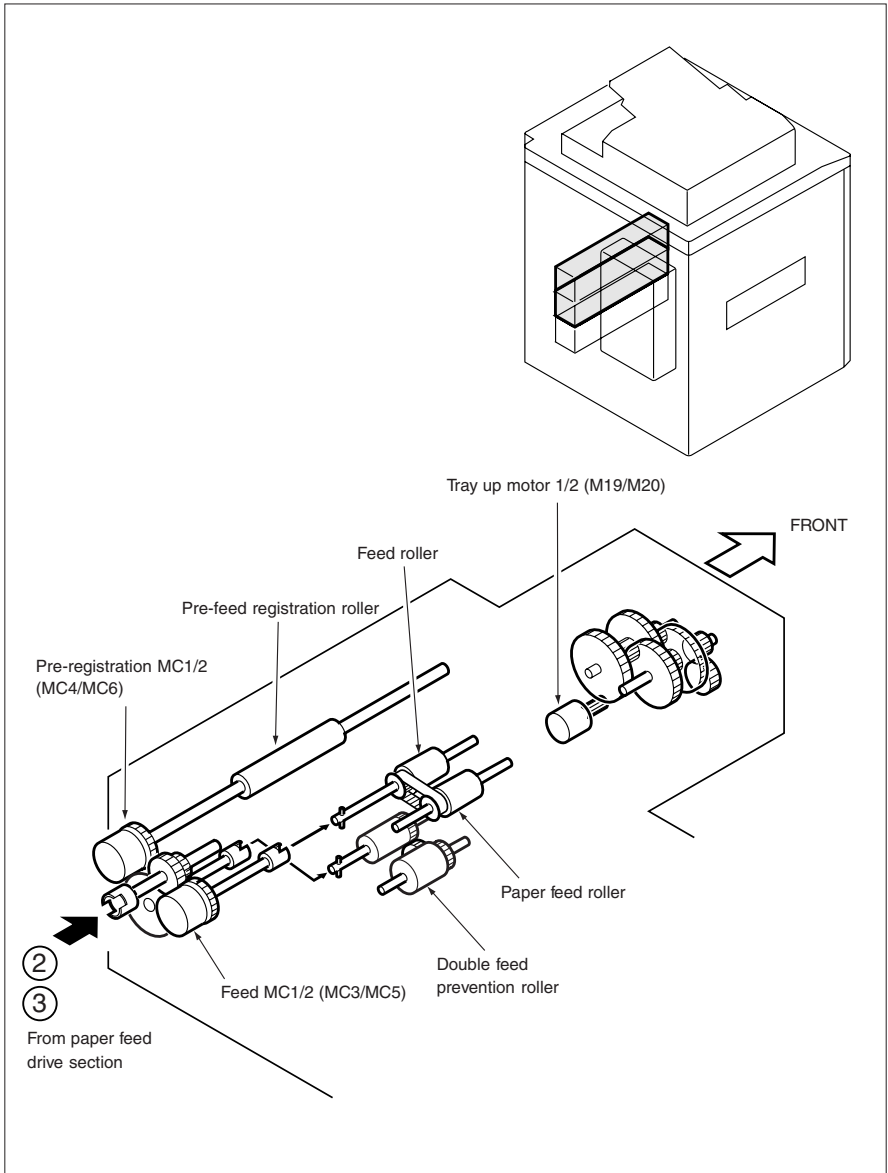


[3] Developing Drive Section

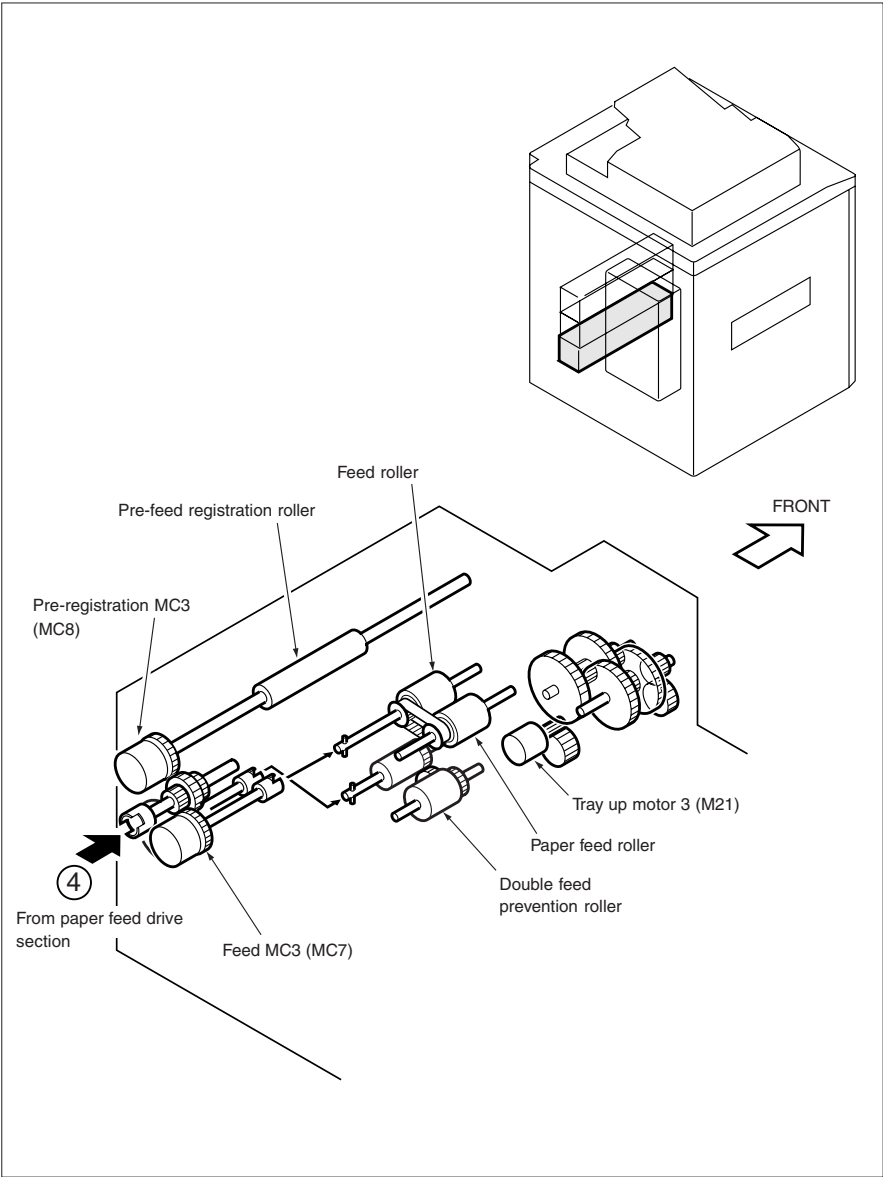
[4] Paper Feed Drive Section

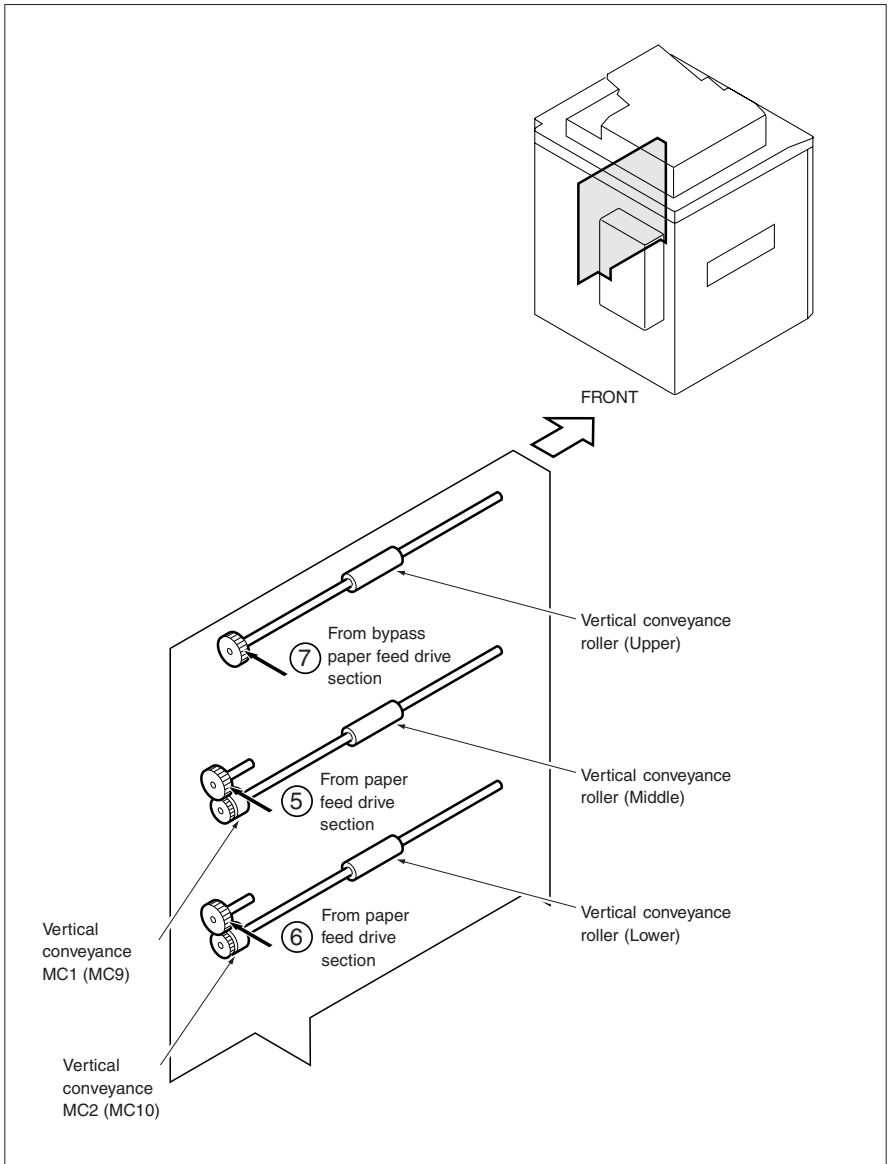


[5] Tray 1 and 2 Paper Feed Drive Section

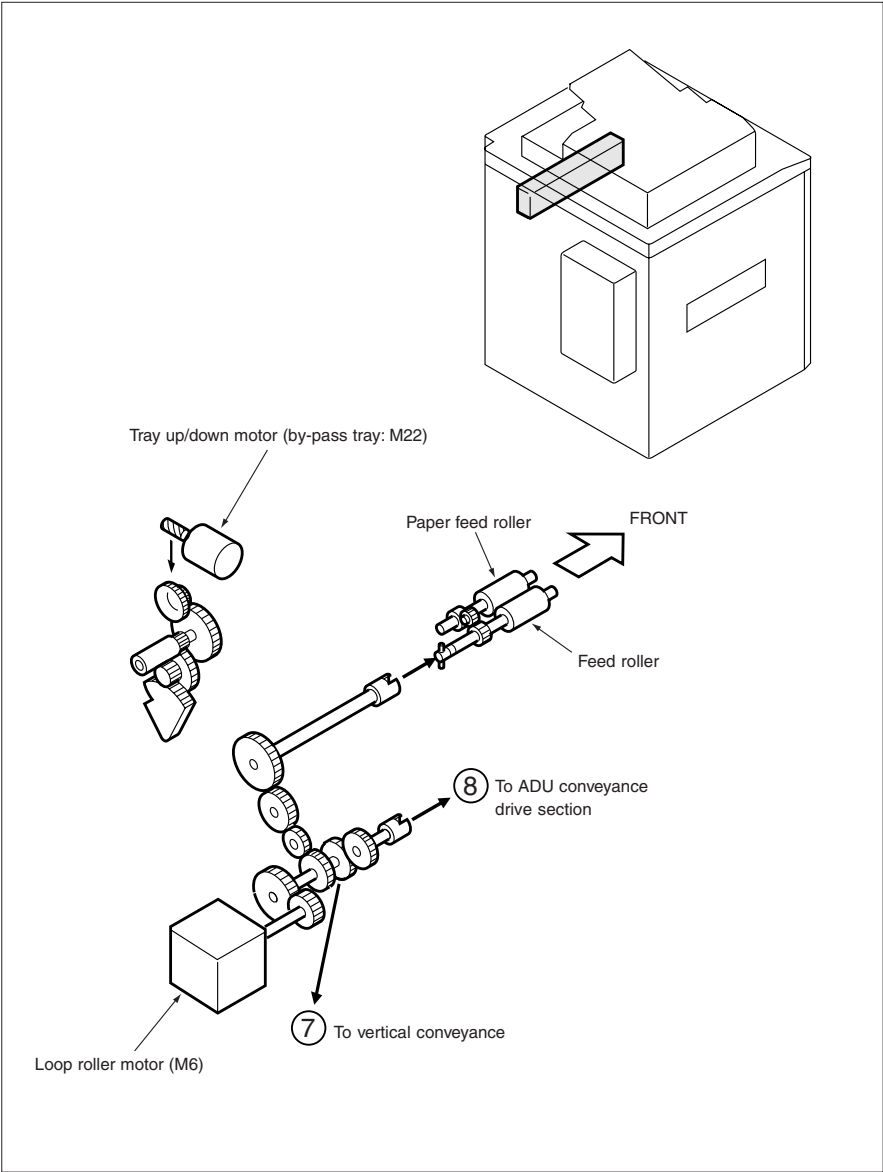


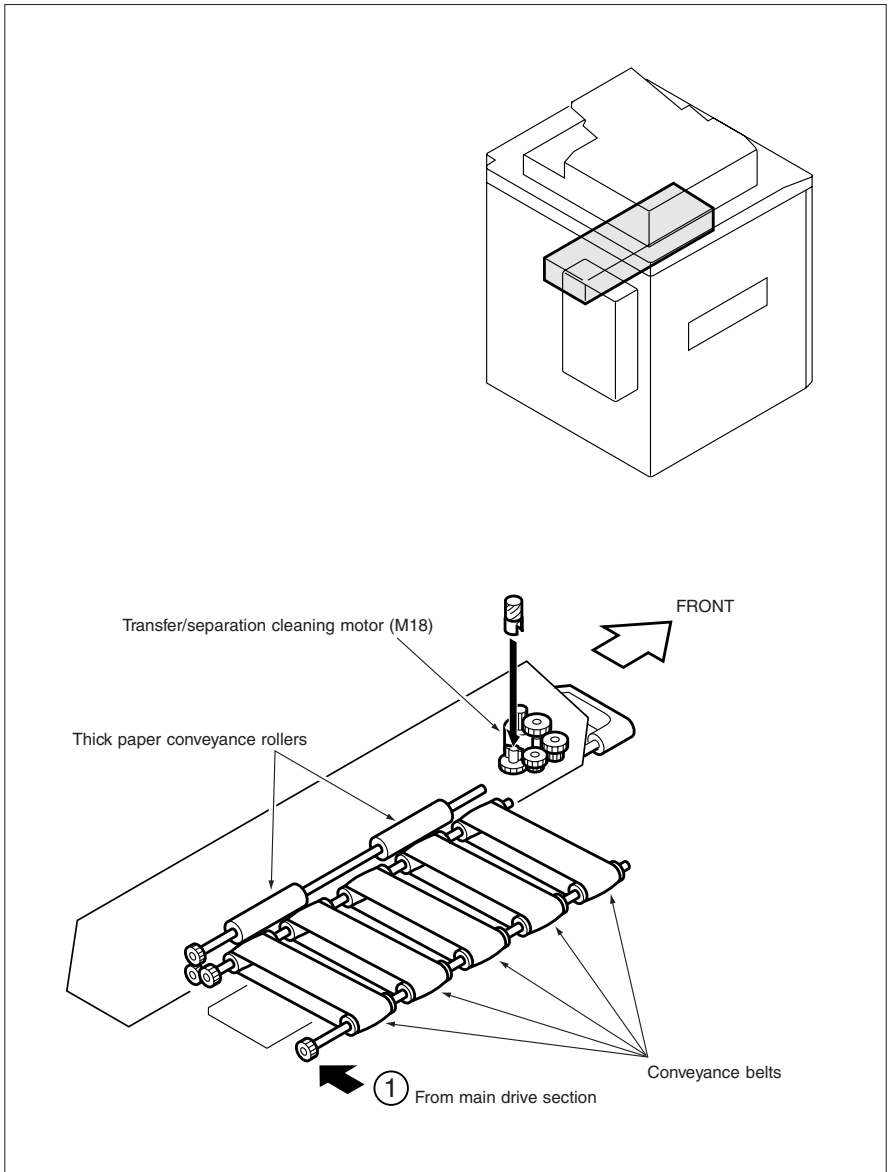
[6] Tray 3 Paper Feed Drive Section



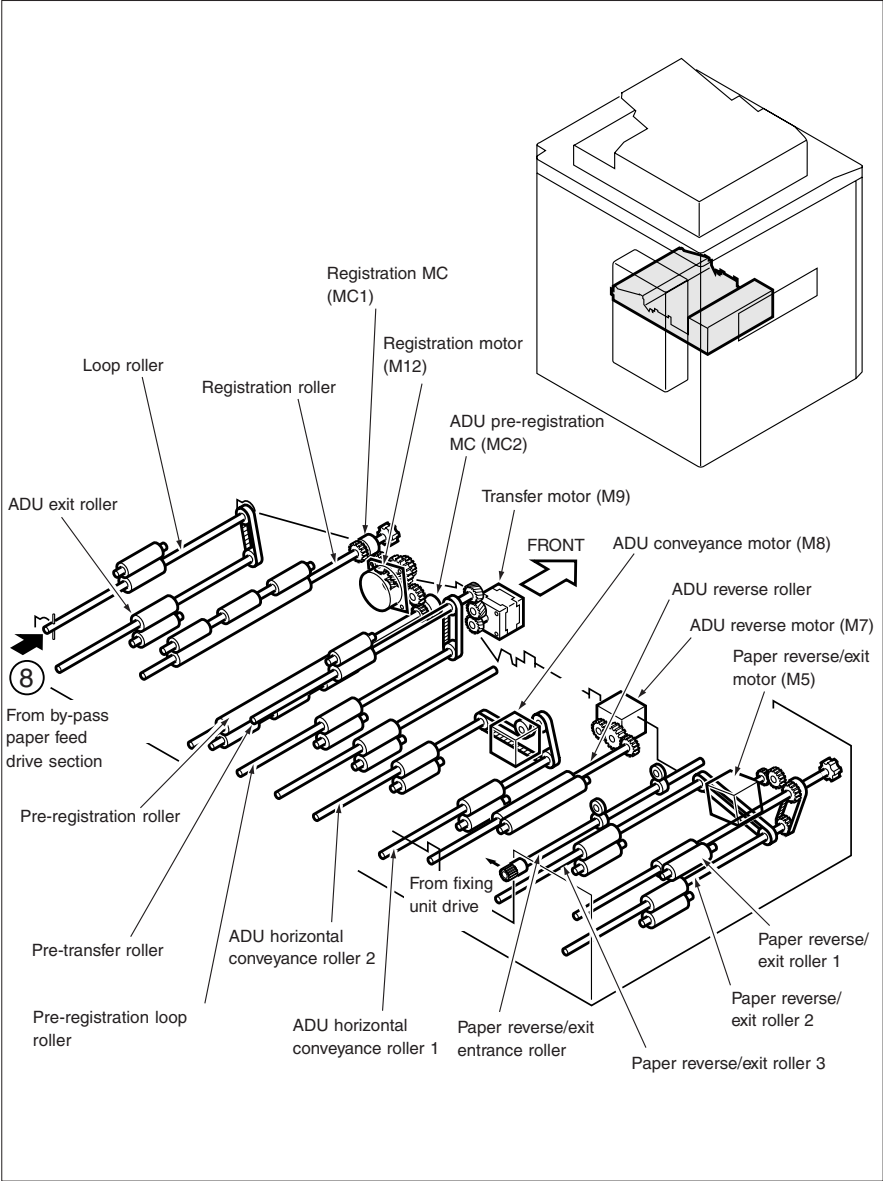
[7] Vertical Conveyance Drive Section

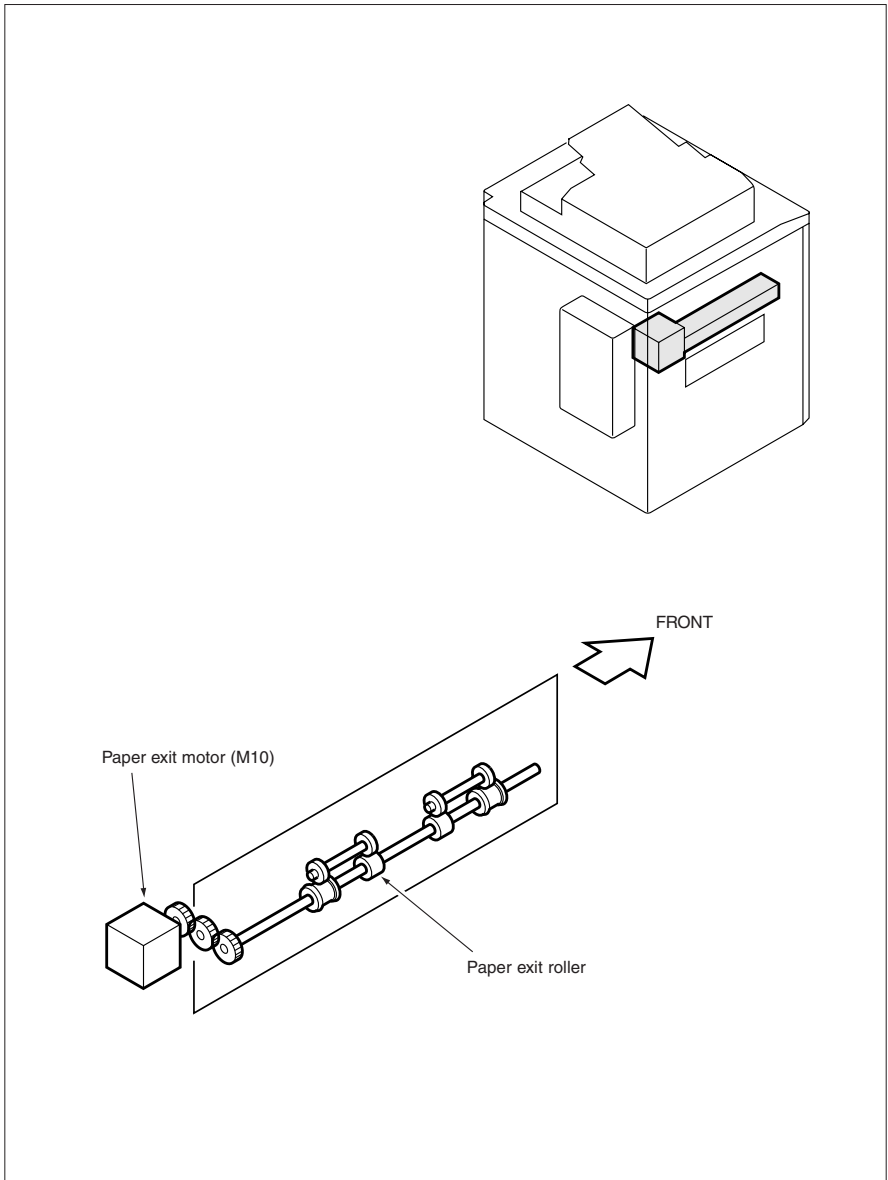
[8] By-pass Paper Feed Drive Section



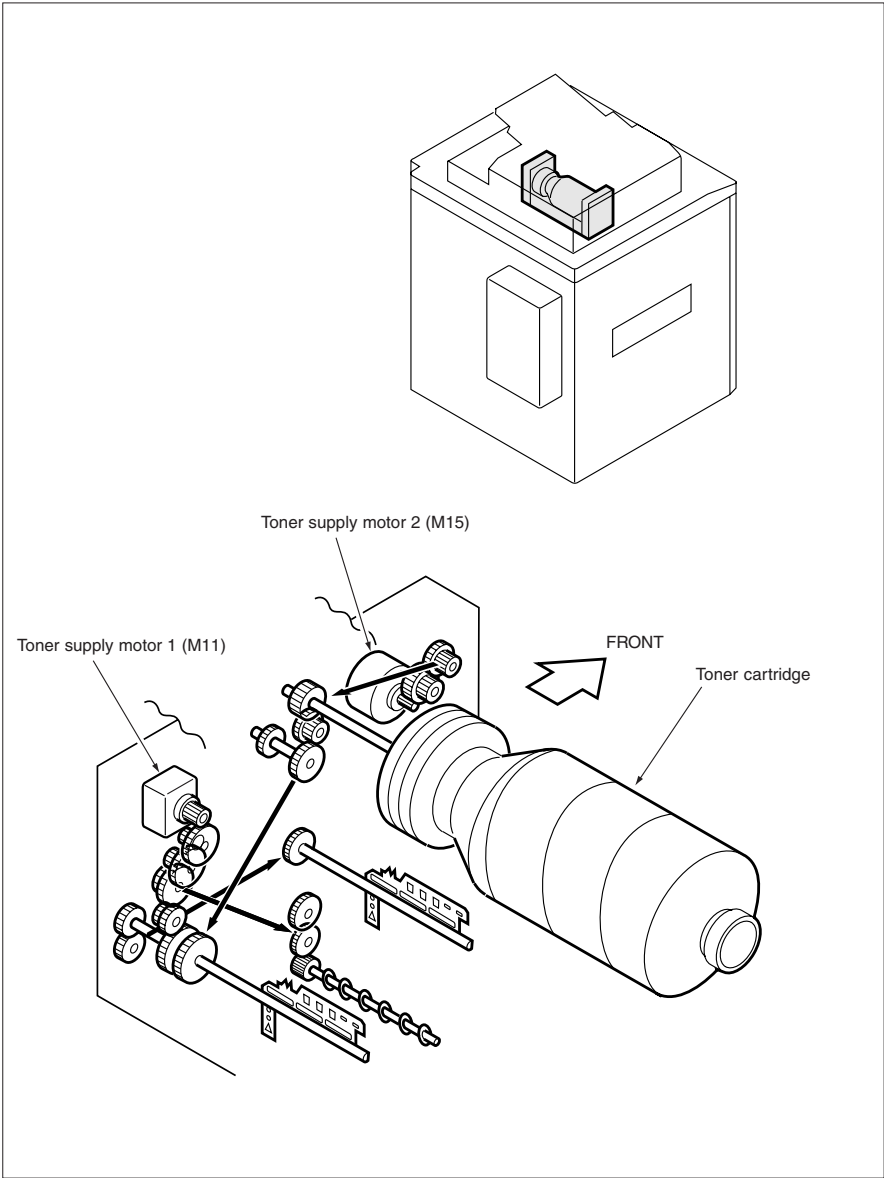
[9] Conveyance/Transfer and Separation Wire Cleaning Drive Section

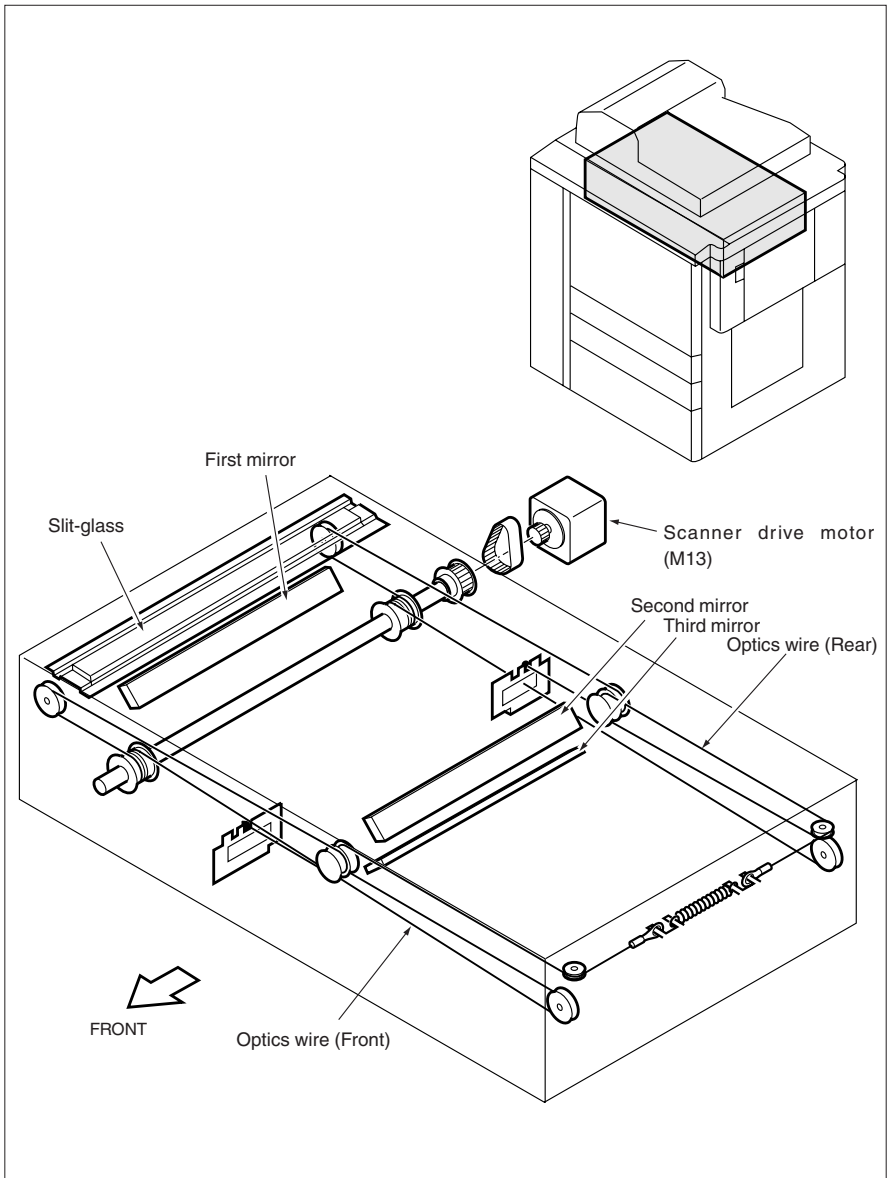
[10] ADU Conveyance Drive Section

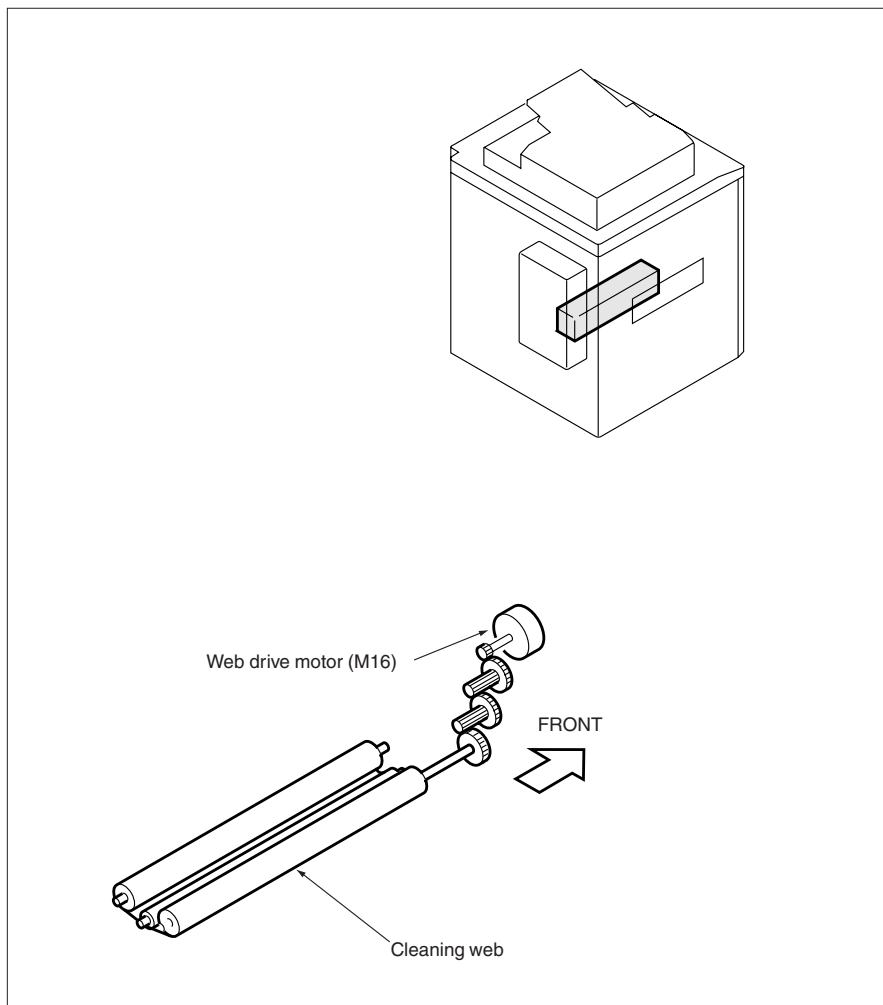


[11] Paper Exit Drive Section

[12] Toner Supply Drive



[13] Optics Drive Section

[14] Web Drive Section

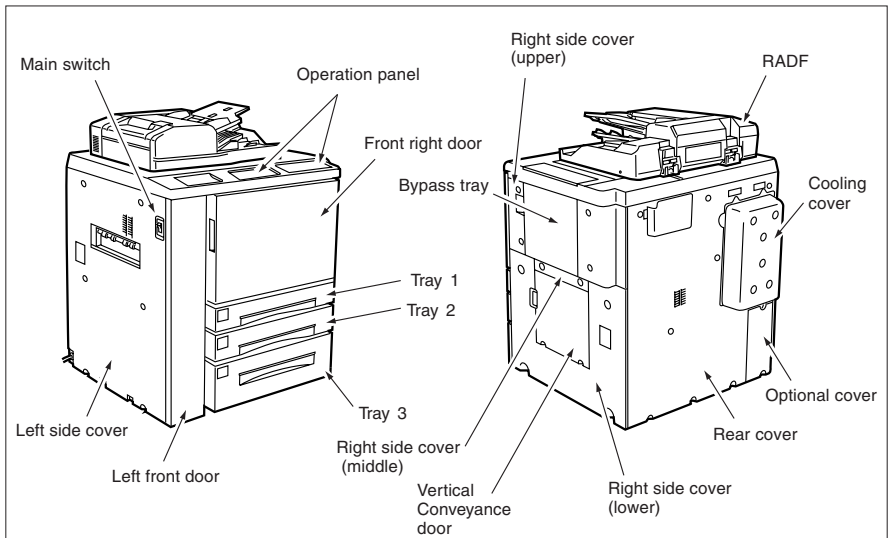
2

UNIT EXPLANATION

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EXTERNAL SECTION

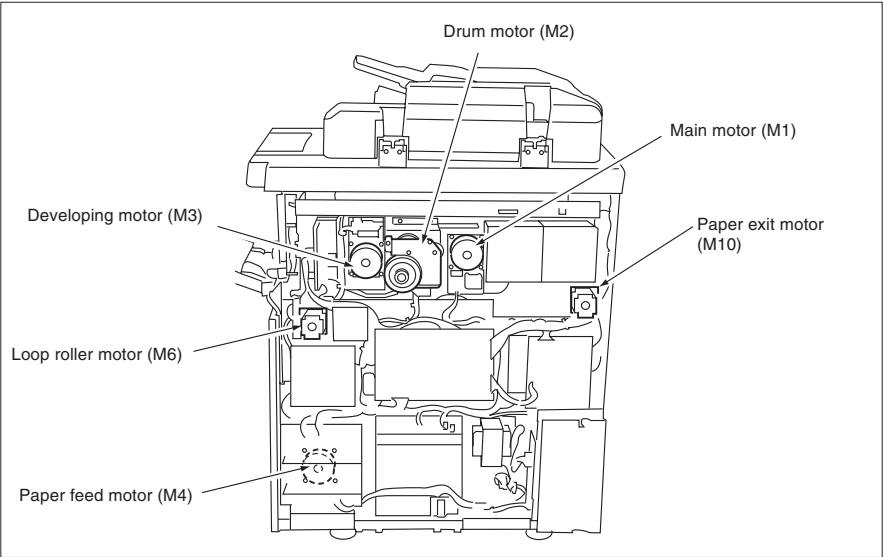
[1] Composition



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DRIVE SECTION

[1] Composition

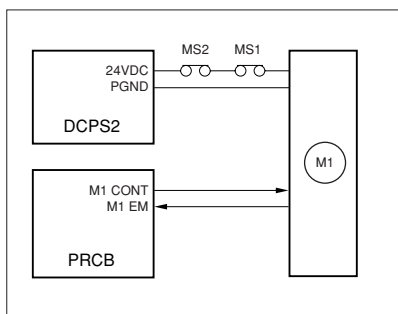


2 UNIT EXPLANATION

[2] Mechanisms

| | Mechanism | Driven Parts | Method |
|----|--------------------|--|-------------------------------------|
| *1 | Drum drive | Drum, toner guide roller | Gear drive (dedicated motor) |
| *1 | Developing drive | Developing sleeve | Gear drive (dedicated motor) |
| *1 | Main drive | Fixing upper roller | Gear drive (dedicated motor) |
| *1 | Paper feed drive | Tray 1/2/3, Vertical conveyance roller (middle/lower) | Gear drive (dedicated motor) + Belt |
| *1 | By-pass/loop drive | By-pass feed roller, loop roller, vertical conveyance roller (upper) | Gear drive (dedicated motor) |
| *1 | Paper exit drive | Paper exit roller | Gear drive (dedicated motor) |

*1 Independent drive mechanisms
Drive mechanisms are driven by dedicated motors to ensure high-speed operation and to improve service-ability and developing performance.

[3] M1 (Main) Control

M1 (main) is controlled by the PRCB (printer control board) and the motor drive power is supplied from DCPS2 (DC power supply unit 2).

1. Operation

M1 is a motor driven by 24V DC. It drives fixing upper and lower rollers, paper conveyance belts, and thick paper conveyance roller. M1 incorporates a speed controller circuit to send a signal indicating abnormal rotation to PRCB when the PLL lock has been released for longer than the specified period of time.

M1 starts rotating when the START PRINT button is pressed and stops when the last copied paper has been ejected. During the warm-up operation, M1 rotates to rotate the fixing rollers. When either one of the front doors of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) actuates to stop supplying the DC power to the motor, causing the M1 to stop.

2. Signals**a. Input signal**

- (1) M1 EM (M1 to PRCB)

M1 fault detection signal

[H]: Abnormal rotation (PLL lock has been released for 2 to 3 seconds or longer.)

[L]: Normal rotation

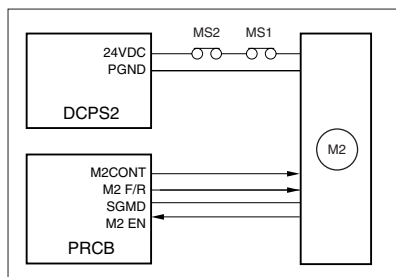
b. Output signal

- (1) M1 CONT (PRCB to M1)

M1 drive control signal.

[H]: M1 ON

[L]: M1 OFF

[4] M2 (Drum) Control

M2 (drum) is controlled by the PRCB (printer control board) and the motor drive power is supplied from DCPS2 (DC power supply unit 2).

1. Operation

M2 is a motor driven by 24V DC. It drives a drum, toner guide brush, toner guide shaft, toner conveyance screw, and separation claw swing sections. M2 incorporates a speed sensor (encoder) to send a feedback signal to PRCB. Using this signal, PRCB detects the rotational speed and calculates the PWM duty to be given to the motor, controlling the M2 speed. In addition to the speed sensor, M2 also has a flywheel mechanism to ensure accurate and steady rotation.

M2 starts rotating when the START PRINT button is pressed and stops when the last copied paper has been ejected.

When either one of the front doors of this machine opens or closes, MS2 (interlock 1) or MS2 (interlock 2) actuates to stop supplying the DC power to the motor, causing the M2 to stop.

2. Signals**a. Input signal**

- (1) M2 EN (M2 to PRCB)

M2 motor encoder signal

b. Output signals

- (1) M2 CONT (PRCB to M2)

M2 drive control signal (PCOM)

[L]: M2 ON

[H]: M2 OFF

- (2) M2 F/R (PRCB to M4)

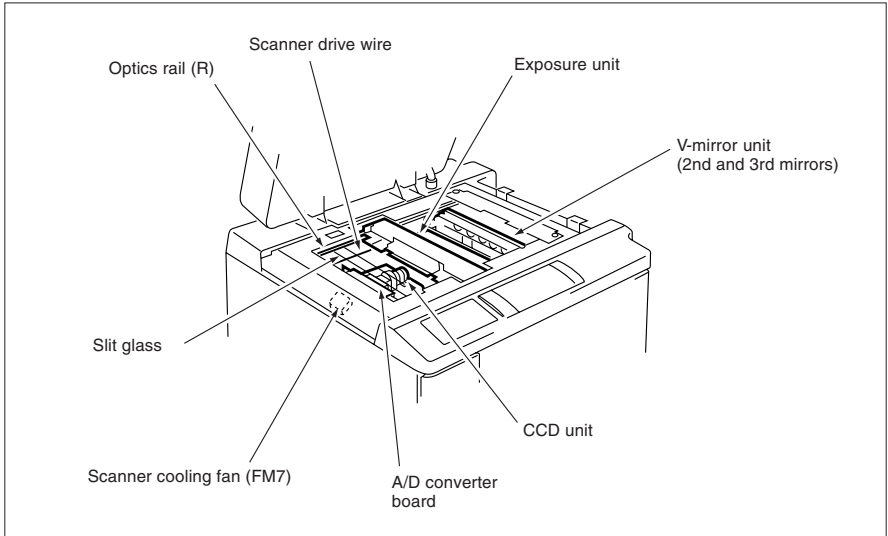
M2 rotational direction switchover signal

[H]: CCW (relative to motor shaft)

[L]: CW (relative to motor shaft)

READ SECTION

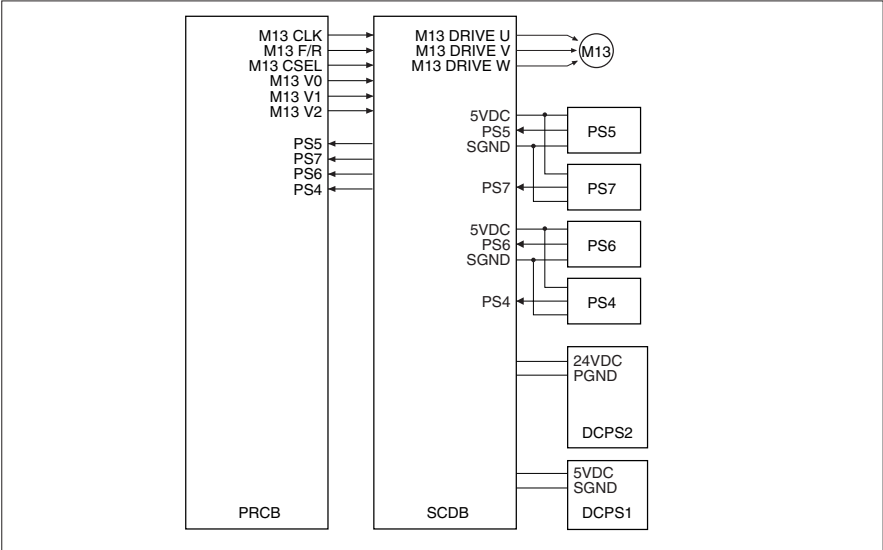
[1] Composition



[2] Mechanisms

| Mechanism | Method |
|-------------------|--|
| Light source | Xenon lamp |
| Exposure | Light source shift slit exposure |
| Scanning | Platen original scanning: 1st, 2nd, and 3rd mirrors are shifted. RADF original scanning: Original is moved with light source held stationary. |
| Lamp power supply | Lamp cord |
| Optics cooling | Cooling fan |

[3] M13 (Scanner Drive) Control



M13 (scanner drive) is driven by the SCDB (scanner drive board) and is controlled by the PRCB (printer control board).

Related signals are PS4 (scanner reverse), PS5 (scanner HP), PS6 (original HP), and PS7 (ADF brake).

1. Operation

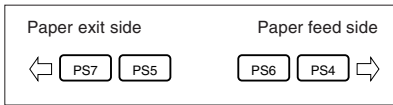
a. Operation of M13

M13 is a 3-phase stepping motor driven using the 3-phase bipolar constant-current drive method. The motor is turned ON/OFF by supplying/stopping clock pulses.

b. Movement speed of the exposure unit
Scanning speed

| Operation mode | Movement speed |
|----------------------|--|
| Scan | 370 mm/sec (400 dpi, 1:1) 164.4 mm/sec (600 dpi, 1:1) |
| Forward | 569.23 mm/sec |
| Home position search | 284.6 mm/sec |

c. Positions of sensors



d. Exposure unit home position search

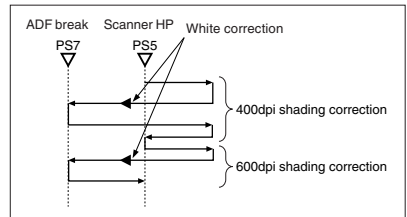
If the exposure unit is not at the home position when the main switch is turned ON or when the START PRINT button is pressed, the home position is searched for in the following manner:

- (1) When the exposure unit is on the paper exit side with respect to the home position
When the exposure unit is at PS7 (ADF brake) (PS7 is ON), it moves forward at a low speed until PS5 (scanner HP) turns ON and OFF again, then it stops. Next the exposure unit moves backward until PS5 turns ON again. When the exposure unit is between PS7 and PS5, it moves backward until PS7 turns ON before moving forward as mentioned above.

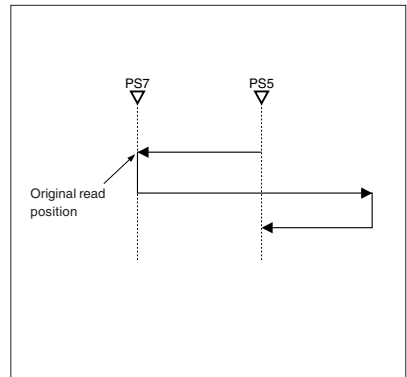
- (2) When the exposure unit is on the paper feed side
When the exposure unit is at PS5 (PS5 is ON), it moves forward at a low speed until PS5 turns OFF before moving as discussed in (1) above. When the exposure unit is on the paper feed side with respect to PS5, it stops after PS5 turns ON and moves forward before moving as discussed in (1) above.

e. Read with shading correction

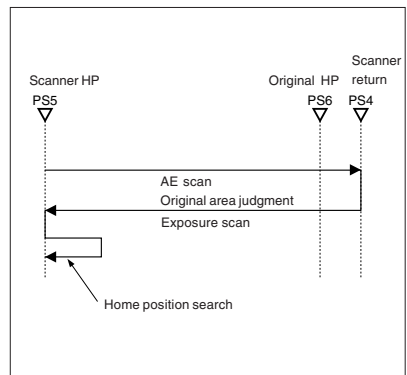
When L1 (exposure lamp) is turned ON, the exposure unit moves toward the paper exit side, thus reading the light reflected by the white reference plate installed underneath the glass stopper plate and performing white correction. Then, L1 is turned OFF for black correction, returning to the home position. Shading correction is performed at 400 dpi and 600dpi.



f. ADF copy operation



g. Platen copy operation



2. Signals

a. PRCB input signals

(1) PS4 (PS4 to SCDB to PRCB)

Scanner reverse detection signal.

In the platen mode, the return position of the exposure unit is detected on the original's leading edge side.

[L]: The exposure unit is detected.

[H]: The exposure unit is not detected.

(2) PS5 (PS5 to SCDB to PRCB)

Scanner home position detection signal.

The reference position for the home position of the exposure unit is detected.

[L]: The exposure unit is detected.

[H]: The exposure unit is not detected.

(3) PS6 (PS6 to SCDB to PRCB)

Original home position detection signal.

In the platen mode, the reference position for the original's leading edge is detected.

[L]: The exposure unit is detected.

[H]: The exposure unit is not detected.

(4) PS7 (PS7 to SCDB to PRCB)

ADF brake detection signal.

In the DF mode, the exposure reference position is detected.

[L]: The exposure unit is detected.

[H]: The exposure unit is not detected.

b. PRCB output signals

(1) M13 CLK (PRCB to SCDB)

Clock signal for M13

(2) M13 F/R (PRCB to SCDB)

M13 rotational direction switchover signal.

[L]: The exposure unit is moved toward the paper exit side.

[H]: The exposure unit is moved toward the paper feed side.

(3) M13 CSEL (PRCB to SCDB)

M13 excitation switchover signal.

[L]: 2-/3-phase excitation

[H]: 2-phase excitation

(4) M13 V0 to V2 (PRCB to SCDB)

M13 excitation current switchover signal.

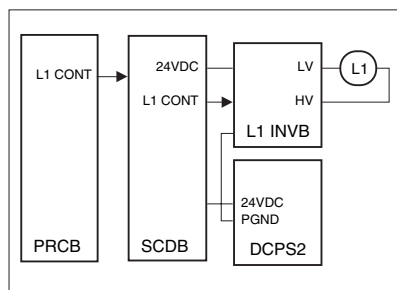
c. OPDB output signals

(1) M13 DRIVE, U, V, W (SCDB to M13)

M13 drive control signals.

These signals are used to control rotation of M13. By supplying and stopping clock pulses, the motor is turned ON/OFF and the rotational direction is switched.

[4] Exposure control



L1 (exposure lamp) is driven by the L1 INV (L1 inverter) and is controlled by the PRCB (printer control board) via the SCDB (scanner drive board).

1. Operation

L1 is a xenon lamp driven by the inverter circuit.

The xenon lamp can emit a constant quantity of light and generates less heat than other lamps, requiring neither light quantity controller circuit nor thermal protector circuit that have been used in the conventional machines. However, since L1 is held lit when the exposure unit is nonoperational in the DF mode, a FM7 (scanner cooling) is installed in the read section.

2. Signals

a. Output signals

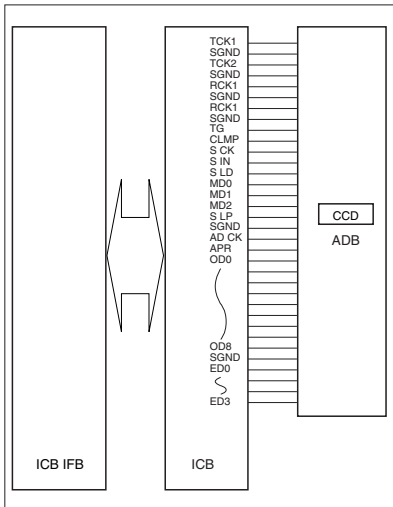
(1) L1 CONT (PRCB to SCDB to L1 INV)

L1 ON/OFF control signal.

[L]: L1 ON

[H]: L1 OFF

[5] Original Read Control



Original read control is performed by the ADB (A/D converter board) and CCD sensor installed in the ADB.

1. Operation

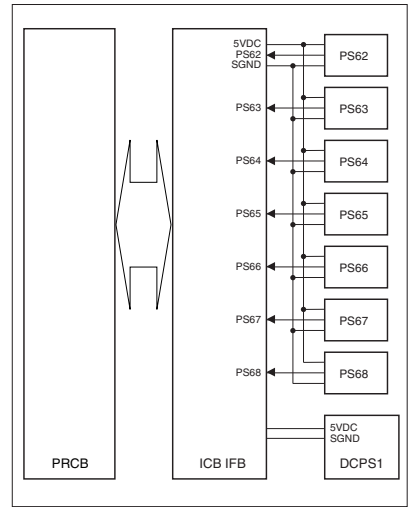
The light reflected by the exposed original is input to the CCD sensor through the lens. The analog voltage corresponding to the quantity of input light is A/D-converted in the ADB, being output to the ICB (image control board).

a. Original read

The original read timing is as follows:

- (1) Platen mode
Specified interval after exposure unit turns PS6 (original HP) ON.
- (2) DF mode
After lapse of the specified time after the original's leading edge turns ON PS308 (Original).

[6] APS Control



The APS method used in the platen mode is different from that used in the DF mode.

The signal read by the APS sensor or the original size detection sensor of the RADF is processed by the CB (control board).

1. Operation

a. APS detection

(1) DF mode

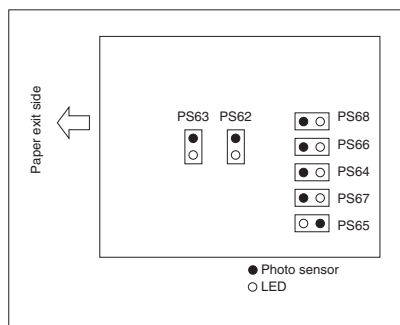
The original size is detected according to the combination of ON/OFF states of PS302 (original size detection 1) and PS303 (original size detection 2) and the resistance value of VR301 (original size detection).

READ SECTION

(2) Platen mode

The paper size is detected according to the combination of ON/OFF states of PS62 (APS 1), PS63 (APS 2), PS64 (APS 3), PS65 (APS 4), PS66 (APS 5), PS67 (APS 6), and PS68 (APS 7).

The APS sensor consists of LEDs and photosensors. Lights emitted from the LEDs is reflected by the original and received by photosensors.



Relationships between sensors and original sizes are as follows:

| Sensor Paper size | PS62 | PS63 | PS64 | PS65 | PS66 | PS67 | PS68 |
|----------------------|------|------|------|------|------|------|------|
| B5R | ○ | ○ | ○ | ○ | ○ | ○ | ● |
| B5 | ○ | ○ | ● | ○ | ● | ○ | ● |
| B4 | ● | ● | ● | ○ | ○ | ○ | ○ |
| A4R | ● | ○ | ○ | ○ | ● | ○ | ● |
| A4 | ○ | ○ | ● | ● | ● | ● | ● |
| A3 | ● | ● | ● | ● | ● | ● | ● |
| 8.5 x 11R | ○ | ○ | ○ | ○ | ● | ○ | ● |
| 8.5 x 11 | ○ | ○ | ● | ○ | ○ | ● | ● |
| 8.5 x 14 | ● | ● | ○ | ○ | ● | ○ | ● |
| 11x 17 | ● | ● | ● | ○ | ● | ● | ● |
| Min. size | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

● ON
○ OFF

b. APS detection timing

The APS detection timing differs between the platen mode and DF mode.

(1) DF mode

When the DF mode is selected or original is set on the RADF original feed tray, APS detection takes place using PS302 (original size detection 1), PS303 (original size detection 2), and VR301 (original size detection).

(2) Platen mode

When RADF is closed and PS315 (APS timing) turns ON, APS detection takes place using PS62 to PS68.

2. Signals

a. Input signals

(1) PS62 (PS62 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

(2) PS63(PS63 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

(3) PS64 (PS64 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

(4) PS65 (PS65 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

(5) PS66 (PS66 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

(6) PS67 (PS67 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

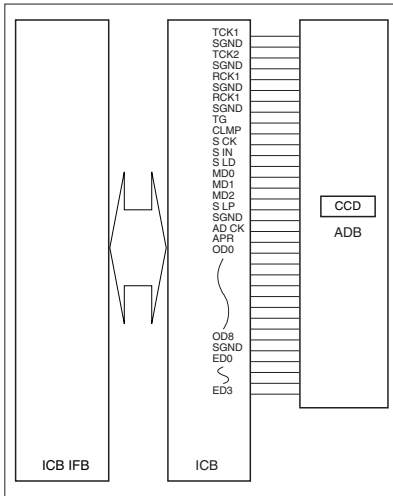
(7) PS68 (PS68 to ICB IFB)

Paper size detection signal

[L]: Paper is detected.

[H]: Paper is not detected.

[7] AE Control



The CCD sensor detects the image density on an original during AE scanning to select the optimum copy gamma correction curve.

AE processing is controlled by the ICB (image control board).

1. Operation

a. AE detection

(1) Platen mode

The image density on an original is measured while the exposure unit moves from the home position to the leading edge of the original after depression of the START button.

<AE sampling area>

(1) Normal copy

10mm inside perimeter of original size detected by APS.

(2) Non-image area erasure mode

Entire original area detected by forward scanning.

(3) DF mode

The image at the leading edge of the original is read when the START button is pressed.

The read data is used to measure the image density on the original.

<AE sampling area>

(1) Main scanning direction

- 10-mm area inside the original detected by APS

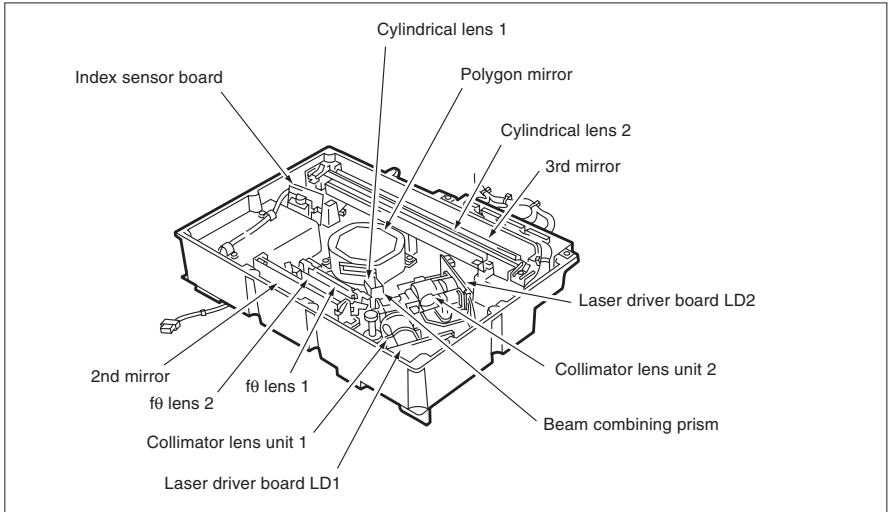
(2) Sub scanning direction

Range between 2mm to 7.3mm from the leading edge of the original.

Blank page

WRITE UNIT

[1] Composition

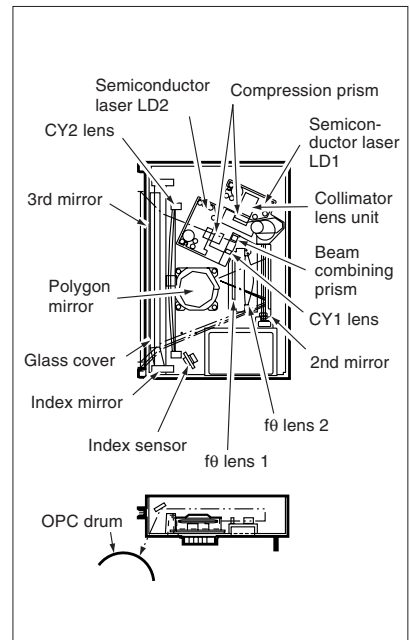


[2] Mechanisms

| Mechanism | Method |
|-------------------------|---|
| *1 Scan | Polygon mirror Rotational speed: 21,850.4 rpm (400dpi) 32,775.6 rpm (600dpi) |
| Light source | Laser diodes (two) (Output: Max. 20 mW) |
| *2 Positioning | Index sensor Fine adjustment prism |
| *3 Laser beam combining | Beam combining prism |

*1 Path of laser light

The light output from semiconductor laser is radiated onto the OPC drum via the collimator lens, compression prism, fine adjustment prism, beam combining prism, cylindrical lens 1, polygon mirror, f θ lens 1, f θ lens 2, second mirror, cylindrical lens 2, and third mirror.



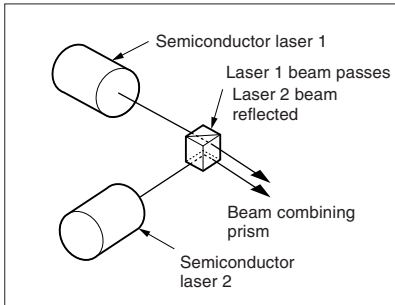
WRITE UNIT

*2 Positioning

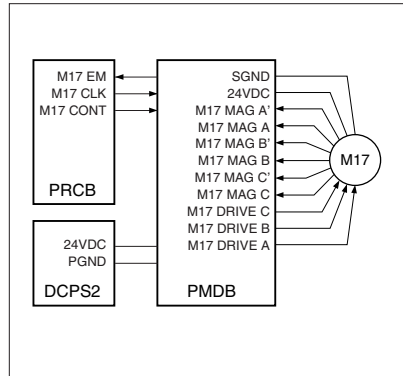
Each laser beam is positioned by the compression prism and fine adjustment prism.

*3 Laser beam combining

Two laser beams output at right angle to each other are redirected in the same direction using the beam combining prism.

**[3] M17 (Polygon) Control**

M17 is driven by the PMDB (polygon driver board) and is controlled by the PRCB (printer control board).

**1. Operation****a. Explanation of operation**

M17 is a 3-phase brushless DC motor which is driven by the 3-phase bipolar method. The current flowing through the coil is switched according to the position of the rotor detected by the position sensor (magnetic sensor) in the motor.

This motor rotates the polygon mirror to scan the laser beams from LDB1 and 2 (laser driver boards 1 and 2) in the axial direction of the drum. Its rotation is held constant by PLL control.

b. Rotational speed

M17 is powered by 24 VDC and its speed is as follows:

| Machine state | Rotational speed |
|---------------|------------------|
| 400 dpi | 21,850.4 rpm |
| 600 dpi | 32,775.6 rpm |

2. Signals**a. PRCB input signals****(1) M17 EM (PMD to PRCB)**

This signal indicates the clock synchronization state of M17.

[L]: Synchronous (normal)

[H]: Asynchronous (abnormal)

b. PRCB output signals

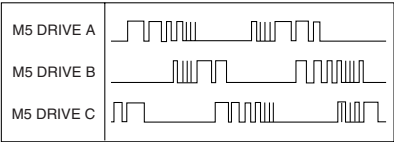
- (1) M17 CONT (PRCB to PMDB)
This signal turns ON/OFF M17.
[L]: M17 ON
[H]: M17 OFF
- (2) M17 CLK (PRCB to PMDB)
This is a reference clock signal for PLL-controlling M17 in PMDB.

c. PMDB input signals

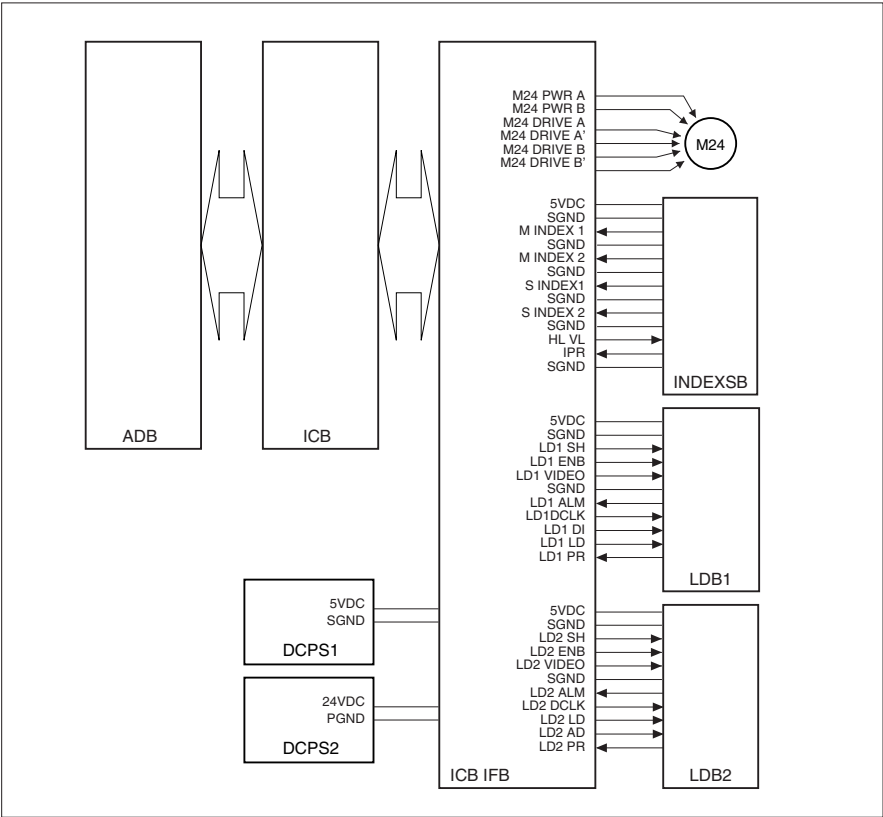
- (1) M17 MAG A/A' (M17 to PMDB)
 - (2) M17 MAG B/B' (M17 to PMDB)
 - (3) M17 MAG C/C' (M17 to PMDB)
- Output signals from the position sensor (magnetic sensor) incorporated in M17.
- The PMDB detects the position of the motor rotator using these signals, switching among outputs, M17 DRIVE A to C.

d. PMDB output signals

- (1) DRIVE A to C (PMDB to M17)
M17 drive signals.
M5 DRIVE A to C supplies the corresponding voltages to M17. Pulses of the voltages applied to M17 are shown below. The pulse widths of the PMDB output signals change as shown below depending on the state of M17 rotation, causing the effective values of the voltages supplied to M17. Thus, the M17 speed can be controlled.



[4] Image Write Control



The analog image data from the CCD sensor is A/D-converted by the ADB (A/D converter board), then sent to the ICB (image control board) for data processing. The processed image data is converted into a laser beam according to the control signal received from the ICB through the ICB IFB (ICB I/F board), then the beam is radiated onto the drum surface. Two lasers

are provided to write two lines of image data per scan. The write start position is detected by the INDEXSB (index sensor board). The ICB has an E-RDH (electronic RDH processing) function to store digitized data. Various editing functions can be performed based on this data.

1. Operation

a. Image processing

The following processing is performed by the ICB (image control board):

- (1) AOC (Auto Offset Control)
During shading correction, a read operation takes place while L1 (exposure lamp) is OFF, and the analog offset voltage of the output from the CCD sensor is automatically adjusted so that the resulting level is the lower limit of the A/D converter.
- (2) AGC (Auto Gain Control)
During shading correction, the white reference plate is read, and the amplification of the analog output from the CCD sensor is automatically adjusted so that the resulting level is the upper of the A/D converter.
- (3) Shading correction

<Timing>

- When SW1 (main switch) is turned ON

- (4) Brightness/density conversion
- (5) EE processing
- (6) Text/dot pattern judgment
- (7) Filtering/magnification change processing
- (8) Magnification change processing
- (9) Copy gamma correction
- (10) Skew correction
- (11) Error diffusion processing
- (12) Data compression
- (13) Write density control

b. Write

The ICB (image control board) sends image data on a pixel basis to LDB1 and LDB2 according to the control signals from the PRCB (printer control board).

LDB1 and LDB2 cause the lasers to emit for a period corresponding to the image data. This laser light is radiated onto the drum surface.

- (1) MPC (Maximum Power Control)

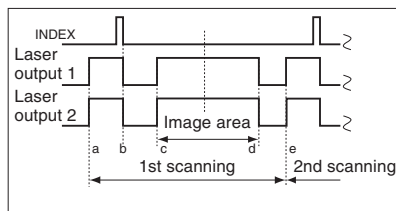
ICB informs LDB1 and LDB2 of the maximum output value and sets that value for the laser beam emission. LDB1 and LDB2 store this setting value and maintain the quantity of the laser beam emission using the APC (Auto Power Control).

<MPC timing>

- a) When SW1 (main switch) is turned ON
- (2) APC (Auto Power Control)
The ICB outputs an APC start instruction to the LDB at the following timing, after MPC is set.

<APC timing>

- a) The LDB1 and LDB2 automatically monitor the laser drive current one line at a time, and controls it so that the light intensity remains the MPC value.
- (3) Write timing
 - a) Main scanning direction
Using INDEX signal from INDXSB, determines the laser write reference position for each scan in the drum rotation direction, and writes the image to copy paper using the paper position information derived from the paper position detection by PS1 (paper mis-centering).



| Symbol | Description |
|--------|--|
| a | Laser goes ON for first scan |
| b | Index sensor goes ON. |
| b-c | The timing at the left is controlled by counting the LD1 IRCLK and LD2 IRCLK signals. It differs depending on the document size. |
| c-d | |
| d-e | |

- b) Sub scanning direction
Specified interval after PS44 (registration) detects the tip of the copy paper.
- (4) Laser beam position correction
 - a) Main scanning direction
The index sensor detects the deviation of the positions of the two beams. This error is corrected by changing the timing of the light emission from the laser.
 - b) Sub scanning direction
The index sensor detects the deviation of the positions of two beams in order to change the angle of the fine adjustment prism of the LD1 laser using M24 (laser correction), thus adjusting the vertical angle of the beam.

2. Signals

a. ICB IFB input signals

- (1) M INDEX 1, 2 (INDEXSB to ICB IFB)
This is an index signal used to detect deviation of vertical scanning.
- (2) S INDEX 1, 2 (INDEXSB to ICB IFB)
This is an index signal used to detect deviation of horizontal scanning.
- (3) IPR (INDEXSB to ICB IFB)
This signal monitors the INDEXSB power supply.
[H]: Normal
[L]: Abnormal
- (4) LD1 ALM (LDB1 to ICB IFB)
This signal indicates the state of the LD1 laser drive current.
[H]: Normal
[L]: Abnormal
- (5) LD1 PR (LDB1 to ICB IFB)
LD1 power supply monitor signal.
[H]: Normal
[L]: Abnormal
- (6) LD2 ALM (LDB2 to ICB IFB)
This signal indicates the state of the LD2 laser drive current.
[H]: Normal
[L]: Abnormal
- (7) LD2 PR (LDB2 -> ICB IFB)
LD2 power supply monitor signal.
[H]: Normal
[L]: Abnormal

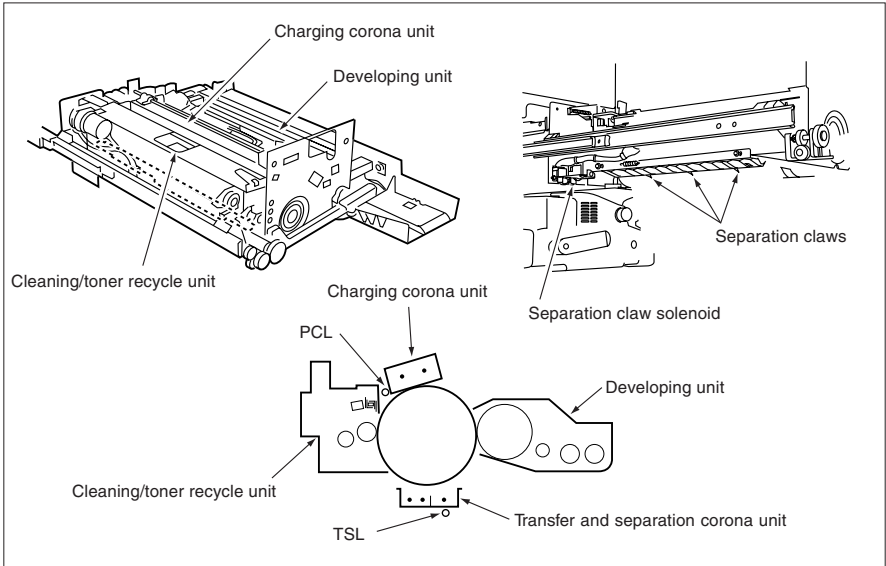
b. ICB IFB output signals

- (1) M24 PWR A (ICB IFB to M24)
M24 A-phase drive signal.
- (2) M24 PWR B (ICB IFB to M24)
M24 B-phase drive signal.
- (3) M24 DRIVE A/A' (ICB IFB to M24)
M24 A-phase drive pulse signal.
- (4) M24 DRIVE B/B' (ICB IFB to M24)
M24 B-phase drive pulse signal.
- (5) LD1 SH (ICB IFB to LDB1)
One scan line equivalent APC sampling signal.
- (6) LD1 ENB (ICB IFB to LDB1)
Laser APC function ON/OFF control signal.
Laser beam emission stops when it is OFF.
- (7) LD2 SH (ICB IFB to LDB2)
One scan line equivalent APC sampling signal.
- (8) LD2 ENB (ICB IFB to LDB2)
Laser APC function ON/OFF control signal.
Laser beam emission stops when it is OFF.

- (9) LD1 VIDEO (ICB IFB to LDB1)
LD1 laser image signal.
- (10) LD2 VIDEO (ICB IFB to LDB2)
LD2 laser image signal.
- (11) LD1 DCLK (ICB IFB to LDB1)
LD1 clock signal for MPC value data transmission.
- (12) LD1 DI (ICB IFB to LDB1)
LD1 data signal for MPC.
- (13) LD1 AD (ICB IFB to LDB1)
LD1 MPC value storage command signal.
- (14) LD2 DCLK (ICB IFB to LDB2)
LD2 clock signal for MPC value data transmission.
- (15) LD2 DI (ICB IFB to LDB2)
LD2 data signal for MPC.
- (16) LD2 AD (ICB IFB to LDB2)
LD2 MPC value storage command signal.

DRUM UNIT

[1] Composition



[2] Mechanisms

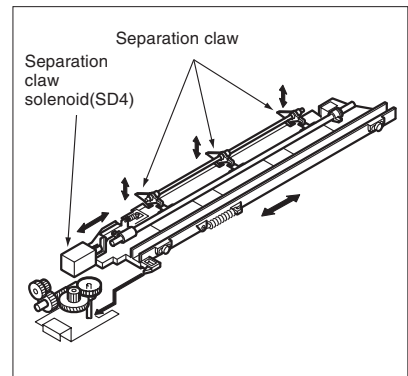
| | Mechanism | Method |
|----|-----------------------|------------------|
| | Carriage support | Fixed rail |
| | PCL/TSL | LED |
| *1 | Auxiliary separation | Separation claws |
| *2 | Conveyance assistance | Ratchet wheel |

The drum unit is an integral assembly consisting of a drum, charging corona unit, developing unit, cleaning unit, toner recycle unit, PCL, and separation claws.

*1 Auxiliary separation

- To prevent paper jamming, three separation claws are used to separate paper from the drum forcibly. These separation claws are pressed against the drum or detached from it by turning ON/OFF the separation claw solenoid (SD4).
- To prevent a specific part of image copied paper from being stained and to prevent the drum from being scratched, the swing

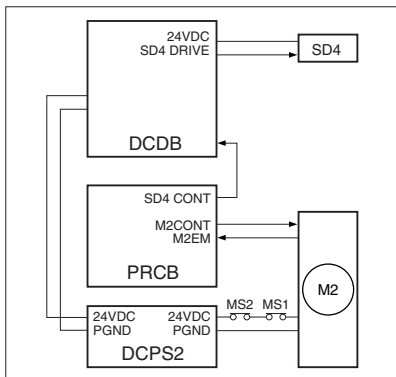
mechanism slides the separation claws about 5 mm back and forth in parallel with the drum surface.



*2 Conveyance assistance

The thick paper conveyance ability has been improved by the use of ratchets.

[3] Separation Claw Control



Separation claws are driven by SD4 (separation claw drive solenoid). Separation claws are slid by M2 (main). SD4 is controlled by the PRCB (printer control board) via the DCDB (DC drive board).

1. Operation

a. Separation claw ON/OFF control

SD4 is a pull-type solenoid powered by 24 VDC. It turns ON to press separation claws against the drum to help image copied paper separate.

(1) SD4 operation timing

SD4 turns ON after a lapse of specified time from turning ON of PS45 (leading edge detection). It turns OFF after a lapse of the time set by the PRCB timer.

b. Separation claw swing control

Separation claws are swung by M2 (main) via the cam mechanism.

2. Signals

a. CB output signal

(1) SD4 CONT (CB to DCDB)

SD4 drive control signal.

[L]: SD4 ON

[H]: SD4 OFF

b. DCDB output signal

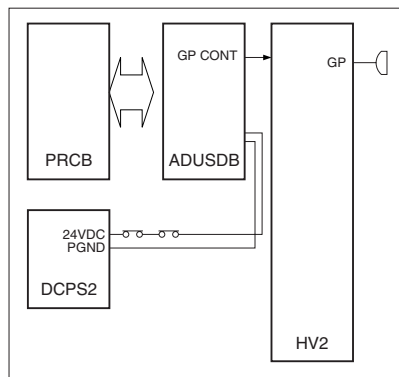
(1) SD4 DRIVE (DCDB to SD4)

SD4 drive control signal.

[L]: SD4 ON

[H]: SD4 OFF

[4] Paper Guide Plate Control



To prevent toner from adhering to the paper guide plate, a constant voltage is applied to the paper guide plate. This voltage is supplied from HV2 (high voltage unit 2) and is controlled by the serial data sent from the PRCB (printer control board) via the ADUSDB (ADU frame control board). When the front door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to HV2, stopping the voltage application to the paper guide plate.

1. Operation

a. ON/OFF timing

Turning ON/OFF in sync with M2 (drum)

b. Applied voltage

-500 VDC

2. Signal

a. Output signal

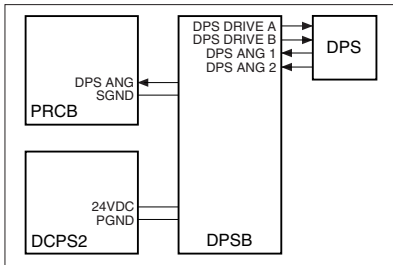
(1) GP CONT (ADUSDB to HV2)

This signal controls turning ON/OFF the voltage application to paper guide plate.

[L]: Voltage applied

[H]: Voltage not applied

[5] Drum Potential Control



The drum potential is detected by the DPS (Drum Potential Sensor) and send the PRCB (printer control board) via the DPSB (drum potential sensor board).

1. Operation

Drum potential control is performed to keep the drum surface potential constant and maintain image quality regardless of the usage environment or the number of copies.

(1) Method

The image is created on the drum surface by the difference in the exposure potential and developing bias. A patch is created with laser PWM maximum.

The developing bias is corrected so that the difference between the after exposure potential (solid black area) and the developing bias is always 500V and the charging current and the grid voltage are corrected so that the difference between the before exposure potential and developing bias is 150V.

(2) Timing

- When the fixing temperature is lower than 50°C (122°F) at power ON.
- At the end of job after every 5,000 copies.

2. Signals

a. PRCB Input signals

- (1) DPS ANG (DPSB to PRCB)
Analog signal corresponding to the drum charging potential.

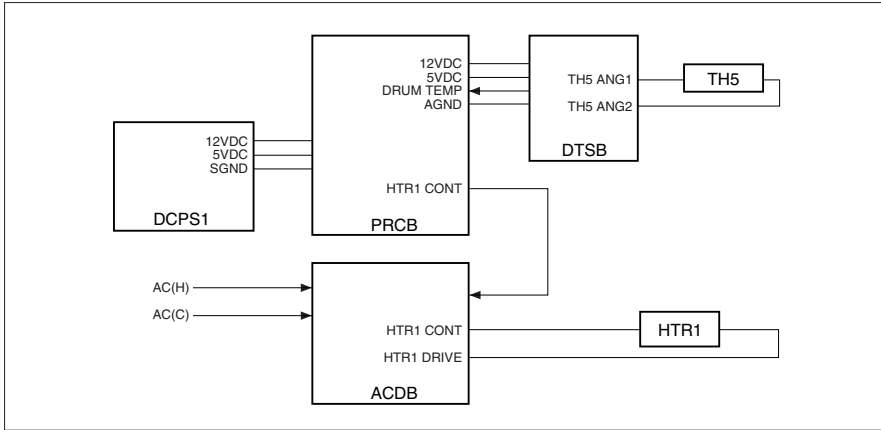
b. DPSB Input signals

- (1) DPS ANG 1 and 2(DPS to DPSB)
Analog signal corresponding to the drum charging potential.

c. DPSB output signals

- (1) DPS DRIVE A and B(DPSB to DPS)
DPS(drum potential) drive signal.

[6] HTR1 (drum heater) Control



The drum is heated by HTR1 (drum heater). The PRCB (printer control board) detects the drum temperature with TH5 (drum temperature sensor) and controls HTR1 through ACDB (AC drive board). TH5 is a sensor that changes resistance according to the detected temperature. Therefore, its value is converted to voltage by DTSB (drum temperature sensor board) and output to PRCB.

1. Operation

a. Temperature Control

HTR1 is normally maintained at 30°C (86°F) and the temperature is increased only when humidity is high. When warming up under high humidity, the drum is rotated after the drum temperature reaches a specified value and then drum potential control, Dmax control, and gradation correction control are performed. When warm up completes, HTR1 is turned ON/OFF to maintain the drum temperature constant. Under high humidity, the temperature is raised to 45°C (113°F) every 30 minutes and then returned to specified temperature to prevent dew condensation.

b. Error detection

HTR1 is equipped with self recover type thermostat to prevent abnormal increase in drum temperature. The thermostat turns off at 70°C (158°F).

2. Signals

a. PRCB input signal

- (1) DRUM TEMP (TH5 to DTSB to PRCB)
Drum temperature signal. The relationship between drum temperature and output voltage is linear.

b. PRCB output signal

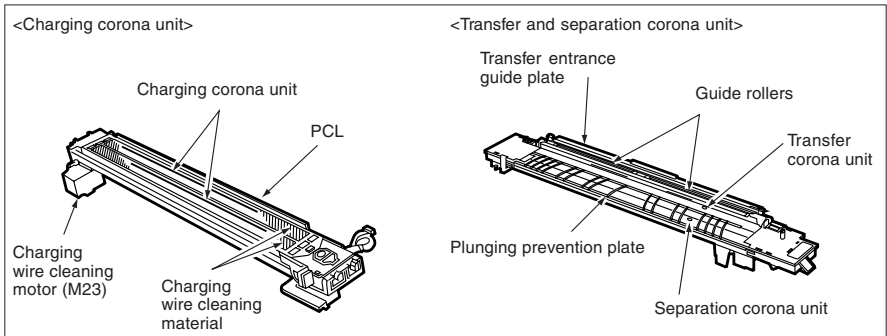
- (1) HTR1 CONT (PRCB to ACDB to HTR1)
Drum heater ON/OFF control signal

c. ACDB output signal

- (1) HTR1 CONT (DTSB to HTR1)
Drum heater ON/OFF control signal
- (2) HTR1 DRIVE (DTSB to HTR1)
Drum heater drive power supply line

CORONA UNIT SECTION

[1] Composition

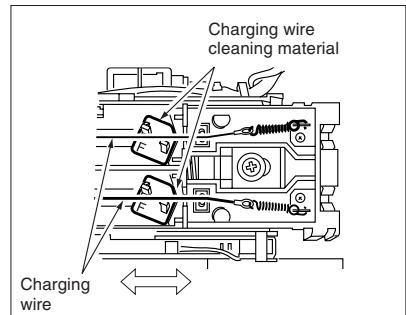


[2] Mechanisms

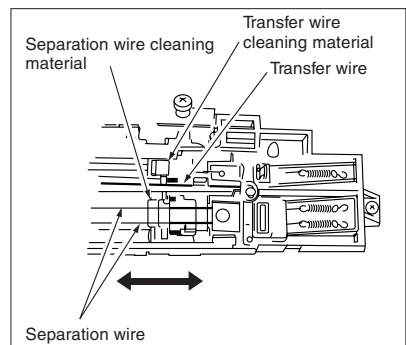
| Mechanism | Method |
|-------------------|--|
| *1 Charging | Scorotron (DC negative corona discharge). Discharge wire: Tungsten, 0.06 mm dia. (gold-plated skin path: with automatic wire cleaner). Grid control: Gold-plated stainless plate |
| *2 Toner transfer | DC positive corona discharge. Discharge wire: Oxide film tungsten, 0.06 mm dia., with automatic wire cleaner. |
| Toner detach | AC/DC corona discharge. Discharge wire: Oxide film tungsten, 0.06 mm dia., with automatic wire cleaner |

*1 Cleaning the charging wire

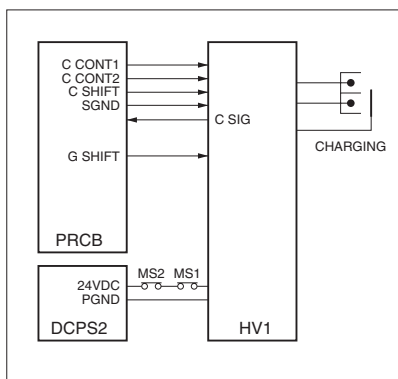
The charging corona unit has wire cleaning pads. The charging wire cleaning pad drive motor moves the charging wire cleaning pad back and forth, removing toner and dirt from the wires.



- *2 Cleaning the transfer and separation wires
- The transfer and separation wire unit has a wire cleaner. The transfer and separation wire cleaning pads drive motor moves the transfer and separation wire cleaning pads back and forth, removing toner and dirt from the wires.



[3] Charging Control



Charging control is performed using the serial data sent from the PRCB (printer control board) via the ADUSDB (ADU stand drive board). HV1 (high voltage unit 1) is used to apply voltage to the charging wires.

1. Operation

a. Charging

A Scorotron charging method is used. 24 VDC supplied from DCPS2 is raised to a negative DC voltage which is then discharged after being applied to the charging wire.

When the front door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to HV1, stopping the voltage supply to the charging corona unit and charging grid.

b. Grid voltage

The grid voltage is output from HV1 to the charging plate.

2. Signals

a. Input signal

(1) C SIG (HV1 to PRCB)

Leak or short detection signal.

[L]: Normal

[H]: Abnormal

b. Output signals

(1) C CONT1, 2 (PRCB to HV1)

Charging 1/2 output ON/OFF control signal.

[L]: Charging voltage ON

[H]: Charging voltage OFF

(2) C SHIFT (PRCB to HV1)

Charging corona unit output level control signal.

The output to the charging corona unit is controlled according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|-----------------------|-------------------------------|
| C SHIFT duty | 20% to 80% |
| Charging output range | -500 μ A to -1900 μ A |

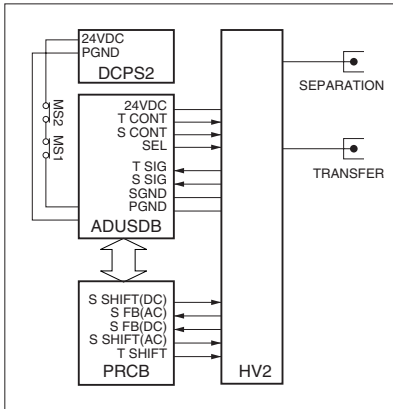
(3) G SHIFT (PRCB to HV1)

Charging grid output level control signal.

The output to the charging grid is controlled according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|---------------------------|-------------------|
| G SHIFT duty | 20% to 80% |
| Grid voltage output range | -400 V to -1000 V |

[4] Transfer/Separation Control



The transfer and separation corona unit is controlled by the PRCB (printer control board) and ADUSDB (ADU stand drive board) via the HV2 (high voltage unit 2). Between the the PRCB and ADUSDB, signals are exchanged using serial data. When the front door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to HV2, stopping the voltage supply to the transfer and separation corona unit.

1. Operation

a. Transfer

Positive DC high voltage is used for toner transfer to the drum surface.

b. Separation

AC high voltage is used for toner separation from the drum surface.

2. Signals

a. PRCB input signals

(1) S FB (AC) (HV2 to PRCB)

Toner separation (AC) current feedback signal. This signal monitors the toner separation (AC) current. It is a 0 to 5V analog signal corresponding to the output level.

(2) S FB (DC) (HV2 to PRCB)

Transfer and separation (DC) current feedback signal

This signal monitors the toner transfer and separation (DC) current. It is a 0 to 5V analog signal corresponding to the output level.

b. PRCB output signals

(1) T SHIFT (PRCB to HV2)

Transfer corona unit output level control signal. This signal controls the level of the output to the transfer corona unit according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|--------------------------|----------------|
| T SHIFT duty | 20% to 80% |
| Transfer DC output range | 70μA to -700μA |

(2) S SHIFT (DC) (PRCB to HV2)

Separation corona unit output level control signal.

This signal controls the level of the output (DC bias component) to the separation corona unit according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|----------------------------|---------------|
| S SHIFT duty | 20% to 80% |
| Separation DC output range | 0μA to -300μA |

(3) S SHIFT (AC) (PRCB to HV2)

Separation corona unit output level control signal.

This signal controls the level of the output (AC component) to the separation corona unit according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|----------------------------|-----------------|
| S SHIFT duty | 20% to 80% |
| Separation AC output range | 500μA to 1400μA |

c. ADUSDB input signals

(1) T SIG (HV2 to ADUSDB)

Leak or short toner transfer abnormality detection signal

[L]: Normal

[H]: Abnormal

(2) S SIG (HV2 to ADUSDB)

Leak or short toner separation abnormality detection signal

[L]: Normal

[H]: Abnormal

d. ADUSDB output signals**(1) T CONT (ADUSDB to HV2)**

Transfer corona unit output ON/OFF control signal.

[L]: Transfer corona unit ON

[H]: Transfer corona unit OFF

(2) S CONT (ADUSDB to HV2)

Separation corona unit output ON/OFF control signal.

[L]: Separation corona unit ON

[H]: Separation corona unit OFF

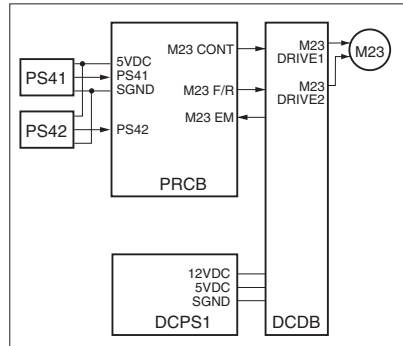
(3) SEL (ADUSDB to HV2)

Feedback switchover signal.

This signal determines whether the feedback signal of the transfer and separation (DC) current is used for toner separation monitor or toner transfer monitor.

[L]: Toner separation monitor

[H]: Toner transfer monitor

[5] M23 (Charger Cleaning) Control

M23 (charger cleaning) is a 12V DC motor which is controlled by the PRCB (printer control board) via the DCDB (DC drive board). Related signals are PS41 (charging wire cleaning pad HP) and PS42 (charging wire cleaning pad limit).

1. Operation**a. Purpose of driving**

M23 is used to drive the charging wire cleaning pad.

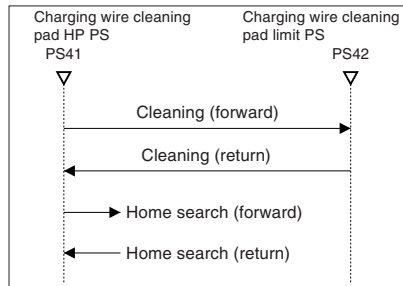
b. Operation timing

The charging corona wires are cleaned when the main switch is turned ON, when the fixing temperature is lower than 50°C (122°F). They are also cleaned when the specified copy count is reached.

* Changeable with 25 mode DIPSW

c. Cleaning operation

The home position of the charging wire cleaning pad is on the rear side of machine. The charging wire cleaning pad operates as follows:



2. Signals

a. PRCB input signals

- (1) M23 EM (DCDB to PRCB)

M23 rotation state detection signal.

[L]: Normal rotation.

[H]: Abnormal rotation

- (2) PS41 (PS41 to PRCB)

Charging wire cleaning pad home position detection signal.

This signal detects the reference position (rear side) of the charging wire cleaning pad home position.

[L]: HP detected

[H]: HP not detected

- (3) PS42 (PS42 to PRCB)

Charging wire cleaning pad limit detection signal. This signal detects the front drive limit position of charging wire cleaning pad.

[L]: Limit position detected

[H]: Limit position not detected

b. CB output signals

- (1) M23 CONT (PRCB to DCDB)

M23 drive control signal.

[L]: M23 ON

[H]: M23 OFF

- (2) M23 F/R (PRCB to DCDB)

M23 rotational direction signal.

[L]: CW (to the rear end from the home position)

[H]: CCW (to the home position from the rear end)

c. DCDB output signal

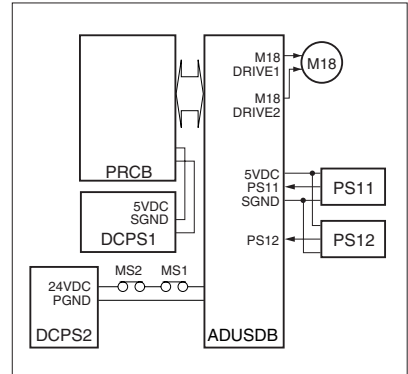
- (1) M23 DRIVE1, 2 (DCDB to M23)

M23 drive control signal.

The drive direction of M23 is controlled by switching the drive current directions of two signals.

| Status | M23 DRIVE1 | M23 DRIVE2 |
|----------------------------|------------|------------|
| Forward stroke of cleaning | H | L |
| Return stroke of cleaning | L | H |
| Stop | L | L |

[6] M18 (Transfer/Separation Cleaning) Control



M18 (transfer/separation cleaning) is a 24 VDC motor which is controlled by the PRCB (printer control board) via the ADUSDB (ADU stand drive board). Between the PRCB and ADUSDB, signals are exchanged using serial data. Related signals are PS11 (transfer/separation wire cleaning pad HP) and PS12 (transfer/separation wire cleaning pad limit). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to DCDB, stopping the voltage supply to M18.

1. Operation

a. Purpose of driving

M8 is used to drive the transfer and separation wire cleaning pads.

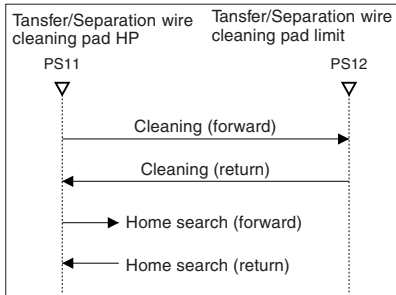
b. Operation timing

The transfer and separation wires are cleaned when the main switch is turned ON, when the fixing temperature is lower than 50°C (122°F), or when the specified copy count is reached.

* Changeable with 25 mode DIPSW.

c. Cleaning operation

The home position of the transfer and separation wire cleaning pads is on the front side of machine. The transfer and separation wire cleaning pads operate as follows:

**2. Signals****a. PRCB input signals****(1) PS11 (PS11 to PRCB)**

Transfer and separation wire cleaning pads home position detection signal.

This signal detects the reference position of the transfer and separation wire cleaning pads home position (front side).

[L]: HP detected

[H]: HP not detected

(2) PS12 (PS12 to PRCB)

Transfer and separation wire cleaning pads drive limit detection signal.

This signal detects the rear limit position of the transfer and separation wire cleaning pads.

[L]: Limit position detected

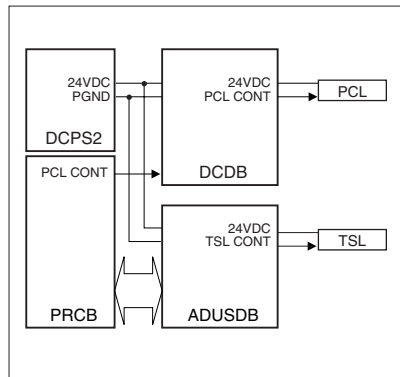
[H]: Limit position not detected

b. ADUSDB output signals**(1) M18 DRIVE1, 2 (ADUSDB to M18)**

M18 drive control signal.

The drive direction of M18 is controlled by switching the drive current directions of two signals.

| Status | M18 DRIVE1 | M18 DRIVE2 |
|----------------------------|------------|------------|
| Forward stroke of cleaning | H | L |
| Return stroke of cleaning | L | H |
| Stop | L | L |

[7] PCL/TSL Control

LEDs are used for PCL (pre-charging lamp) and TSL (transfer synchronization lamp). PCL is driven by the DCDB (DC drive board). TSL is driven by the ADUSDB (ADU stand drive board). PCL and TSL are controlled by the PRCB (printer control board).

1. Operation

PCL is turned ON/OFF in sync with M2 (drum drive). TSL turns ON after a lapse of specified time from turning ON of PS45 (leading edge detection) of the second paper feed section. It turns OFF after a lapse of specified time from detection of the trailing edge of copy paper.

2. Signals**a. Output signals****(1) PCL CONT (PRCB to DCDB to PCL)**

PCL ON/OFF control signal.

[L]: PCL ON

[H]: PCL OFF

(2) TSL CONT (ADUSDB to TSL)

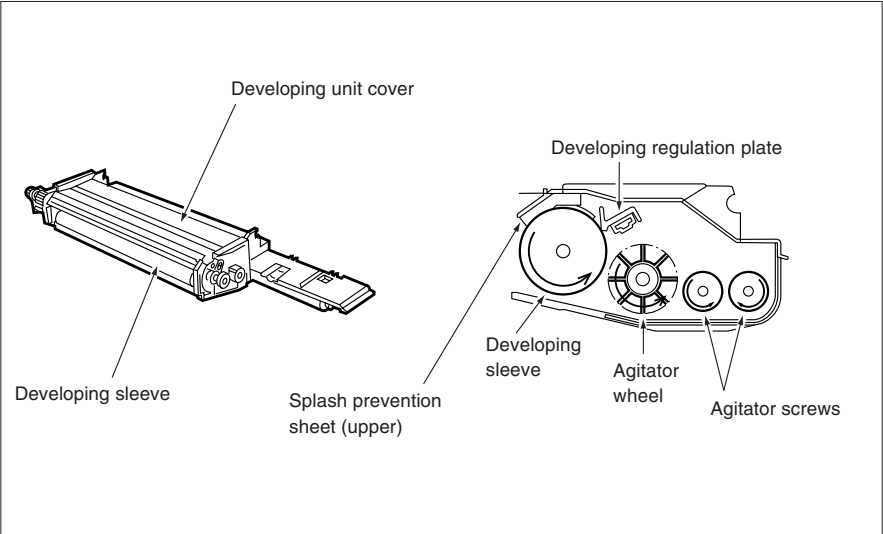
TSL ON/OFF control signal.

[L]: TSL ON

[H]: TSL OFF

DEVELOPING UNIT

[1] Composition



[2] Mechanisms

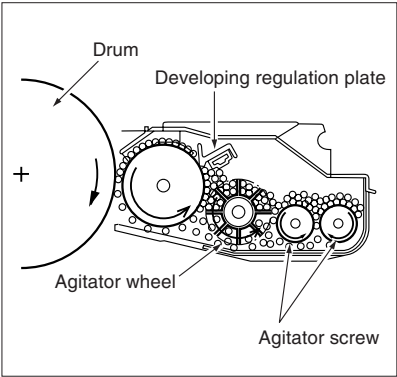
| Mechanism | Method |
|---------------------|-------------------------------------|
| Developing | 2-component developer |
| Developing bias | DC bias |
| Developer agitation | Main agitator Auxiliary agitator |

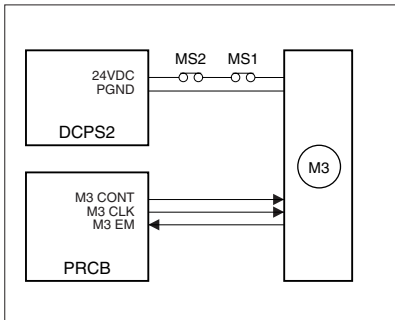
1. The developing unit drive motor (M3) drives the following parts via the gear unit at the back:

- Developing sleeve
- Agitator wheel
- Agitator screws

2. Flow of developer

The developer inside the developing unit is supplied to the developing sleeve by the agitator wheel, and maintained at a constant thickness by the developing regulation plate (bristle height regulation plate). The developer remaining on the developing sleeve is returned to the agitator screws.



[3] M3 (Developing Unit Drive) Control

M3 (developing) is controlled by the PRCB (printer control board) and the motor drive power is supplied by DCPS2 (DC power supply unit 2). When the front left or right door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to M3, stopping the voltage supply to the developing sleeve.

1. Operation

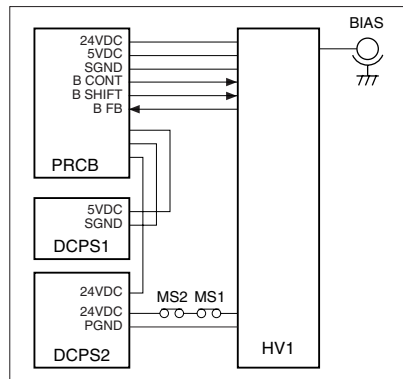
M3 which is the 24V driven DC motor drives the developing sleeve and agitator. M3 equipped with speed control circuit send the rotation error signal to PRCB when PLL lock is released longer than the specified time period. M3 starts after the specified time interval from the start switch is ON, and stops after the specified time interval from the charging wire unit stops charging.

2. Signals**a. Input signals**

- (1) M3 EM (M3 to PRCB)
M3 fault detection signal
[H] Abnormal rotation (when PLL is unlocked for more than 1.5 seconds)
[L] Normal rotation

b. Output signals

- (1) M3 CONT (PRCB to M3)
M3 drive control signal
[L] M3 ON
[H] M3 OFF

[4] Developing Bias Control

The developing bias is controlled by PRCB (printer control board) via the HV1 (high voltage unit 1). When the front left or right door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to HV1, stopping the voltage supply to the developing sleeve.

1. Operation

The developing bias voltage is applied to the developing sleeve based on the M2 (drum) rotation state signal.

2. Signals**a. Input signals**

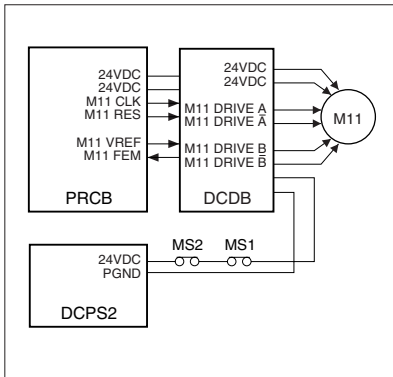
- (1) B FB (HV1 to PRCB)
Developing bias voltage feedback signal.
This signal monitors the developing bias voltage. It is an 0V to 5V analog signal corresponding to the output level.

b. Output signals

- (1) B CONT (PRCB to HV1)
Developing bias output ON/OFF control signal.
[L]: Developing bias ON
[H]: Developing bias OFF
- (2) B SHIFT (PRCB to HV1)
Developing bias output level control signal.
The developing bias output level is controlled according to the duty ratio of the pulse (PWM) signal sent from the PRCB.

| | |
|------------------------------|------------------|
| B SHIFT duty | 20% to 80% |
| Developing bias output range | -300 V to -800 V |

[5] Toner Density Control



Toner density is controlled by controlling M11 (toner supply 1) by PR CB (printer control board) via DCDB (DC drive board). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motor, stopping the M15.

1. Operation

a. Toner density detection

The toner density detection sensor detects the density of toner concentration in the developing unit using a patch detection method, and outputs the corresponding analog voltage signal to the PR CB.

The PR CB compares the detected voltage with the reference value to determine whether toner must be added.

b. Toner supply operation

Upon read of the patch, M11 is turned on to supply toner. The time needed to add toner depends on the paper size.

2. Signals

a. PR CB input signal

- (1) M11 FEM (DCDB to PR CB)
Signal detecting whether the fuse for M11 is blown.
[L]: Not detected
[H]: Detected

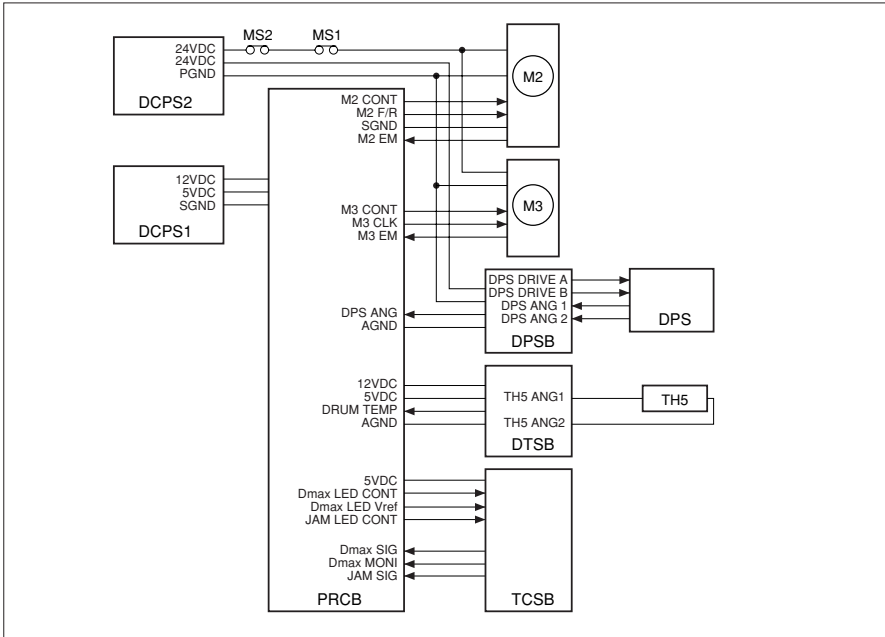
b. PR CB output signals

- (1) M11 CLK (PR CB to DCDB)
Reference clock signal for M11 rotational speed control.
- (2) M11 RES (PR CB to DCDB)
M11 reset signal.
- (3) M11 VREF (PR CB to DCDB)
M11 current control signal.

c. DCDB output signals

- (1) M11 DRIVE A, \bar{A} (DCDB to M11)
M11 A-phase drive signal.
- (2) M11 DRIVE B, \bar{B} (DCDB to M11)
M11 B-phase drive signal.

[6] Dmax Control



Dmax control is performed by the TCSB (toner control sensor board), M2 (drum), M3 (developing), and so on. These parts are controlled by the PRCB (printer control board). Related boards and sensors are a DPSB (drum potential sensor board), DPS (drum potential sensor), DTSB (drum temperature sensor board), and TH5 (drum temperature sensor).

When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motor, stopping the M2 and M3.

1. Operation

The purpose of Dmax control is to adjust the maximum density to the reference level for each machine.

a. Dmax control

(1) Method

Latent images are created several times at the maximum exposure level, images are developed with the rotational speed of the developing sleeve varied, then each density is read by the Dmax sensor (PD1) on the TSCB.

The developing sleeve speed detected when the density has reached the reference level is recorded as the optimum sleeve speed and the developing is performed at this optimum sleeve rotation speed.

(2) Timing

- a) When the fixing temperature is lower than 50°C (122°F) at power ON
- b) At the end of job after every 20,000 copies.

2. Signals

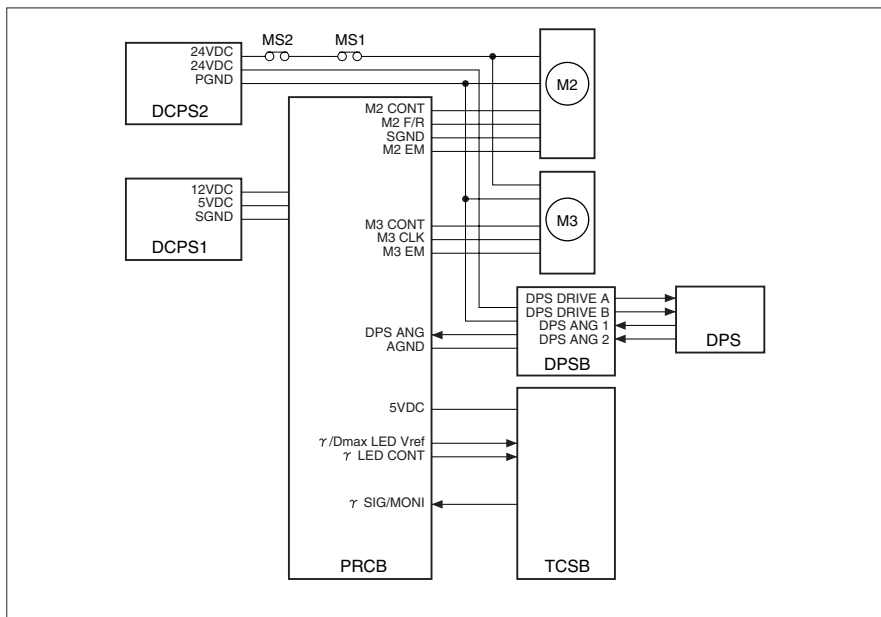
a. PRCB input signals

- (1) Dmax SIG (TCSB to PRCB)
Output voltage of the Dmax value detection sensor (PD1) on the TCSB.
Reference voltage: 2.5V
- (2) Dmax MONI (TCSB to PRCB)
This signal monitors the light reflected by the drum surface (without toner).
The voltage applied to the Dmax detection LED is corrected by $\gamma/\text{Dmax LED Vref}$ so that the output voltage becomes 4V (calibration).
Reference voltage: 4V
<Timing->
a) Before D max correction.
- (3) JAM SIG (ITCSB to PRCB)
This signal detects a jam caused by paper wrapping around the drum. A jam is detected when the voltage becomes 4.0V or more.
[L]: LED ON
[H]: LED OFF

b. Output signals

- (1) Dmax LED CONT (PRCB to TCSB)
This signal turns ON/OFF the D max LED.
- (2) Dmax LED Vref (PRCB to TCSB)
Power supply line for PD1 LED on TSCB.
The voltage is adjusted so as the Dmax MONI signal to be 4 V.
- (3) JAM LED CONT (PRCB to TCSB)
This signal turns ON/OFF the JAM LED.
[L]: LED ON
[H]: LED OFF

[7] Gradation Correction Control



Gradation correction control is performed by the TCSB (toner control sensor board), M2 (drum), M3 (developing), and so on. These parts are controlled by the PRCB (printer control board).

1. Operation

The gradation characteristics of the toner density versus exposure amount at the image forming section (drum area) are detected to obtain a linear relation between the image density on a document and the copying image density (toner density).

(1) Method

Exposure is performed with the laser PWM varied in several steps, and development is performed at the toner transfer sleeve speed obtained by Dmax correction.

Next, each density is read by γ sensor (PD2) on the TCSB to detect the gradation characteristics of image density.

The gradation characteristics obtained here are used as the values for correcting the laser exposure amount.

(2) Timing

- When the fixing temperature is lower than 50°C (122°F) at power ON
- At the end of job after every 20,000 copies.

2. Signals

a. PRCB Input signals

(1) γ SIG/MONI (TCSB to PRCB)

Output voltage from the γ sensor (PD2) on the TCSB. This signal monitors the light reflected by the drum surface (without toner).

The voltage applied to the gradation detection LED is corrected by γ /Dmax LED Vref so that the output voltage becomes 4.5V (calibration).

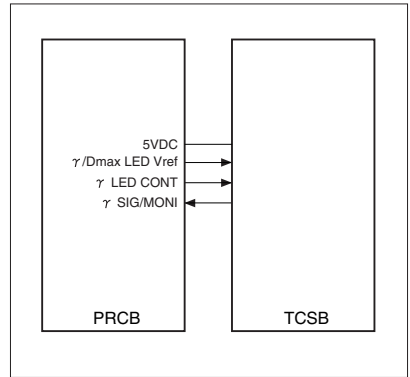
Reference voltage: 4.5V

<Timing>

Before gradation correction.

b. PRCB Output signals

- (1) γ LED CONT (PRCB to TCSB)
ON/OFF control signal for gradation detection LED.
[L]: LED ON
[H]: LED OFF
- (2) γ Dmax LED Vref (PRCB to TCSB)
Power supply line to the γ LED on the TCSB.
The voltage applied to the γ LED is adjusted so that the γ MONI signal becomes 4.5V

[8] Dot Diameter Correction Control

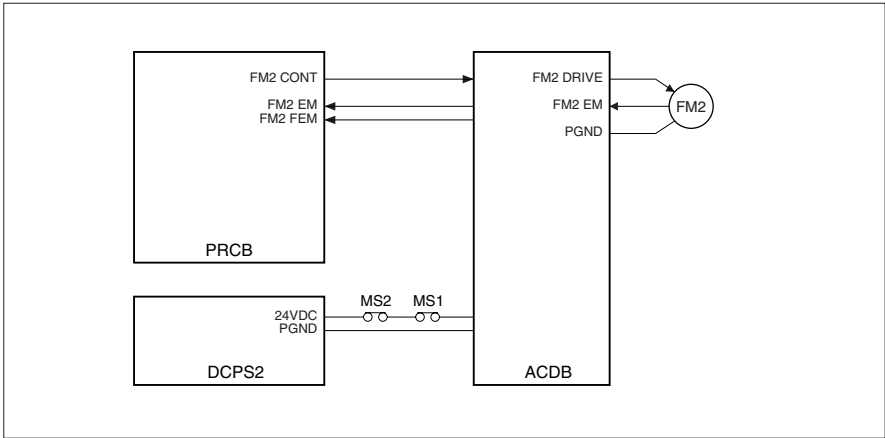
Dot diameter is detected by TCSB and controlled by PRCB.

1. Operation

Dot diameter correction is performed to prevent the fluctuation of 1 dot laser beam in diameter due to a soil in the writing unit or a change of developing ability.

- (1) Method
Creates several same condensation dot pattern patches changing the laser power and reads them with γ sensor (PD2). Uses the laser power where the γ sensor output reaches reference voltage as MPC.
- (2) Timing
 - a) At the end of job after every 20,000 copies.

[9] FM2 (Developing Suction) Control



FM2 (Developing suction) is controlled by the PRCB (printer control board) via the ACDB (AC drive board). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply, stopping FM2.

1. Operation

a. ON timing

During idling: FM2 turns when M2 (drum) turns ON.

During copying: FM2 turns when M1 (main) turns ON.

b. OFF timing

During idling: FM2 turns OFF when M2 turns OFF or in the specified interval after completion of copying.

During copying: Always ON.

2. Signals

a. PRCB input signals (ACDB to PRCB)

(1) FM2 EM (FM2 to ACDB to PRCB)

FM2 fault detection signal.

[L]: FM2 is normal.

[H]: FM2 is abnormal.

(2) FM2 FEM (ACDB to PRCB)

Signal detecting whether the 24V fuse for FM2 is blown.

[L]: Blown fuse is not detected.

[H]: Blown fuse is detected.

b. PRCB output signals

(1) FM2 CONT (PRCB to ACDB)

FM2 control signal.

[L]: FM2 ON

[H]: FM2 OFF

c. ACDB output signal

(1) FM2 DRIVE (ACDB to FM2)

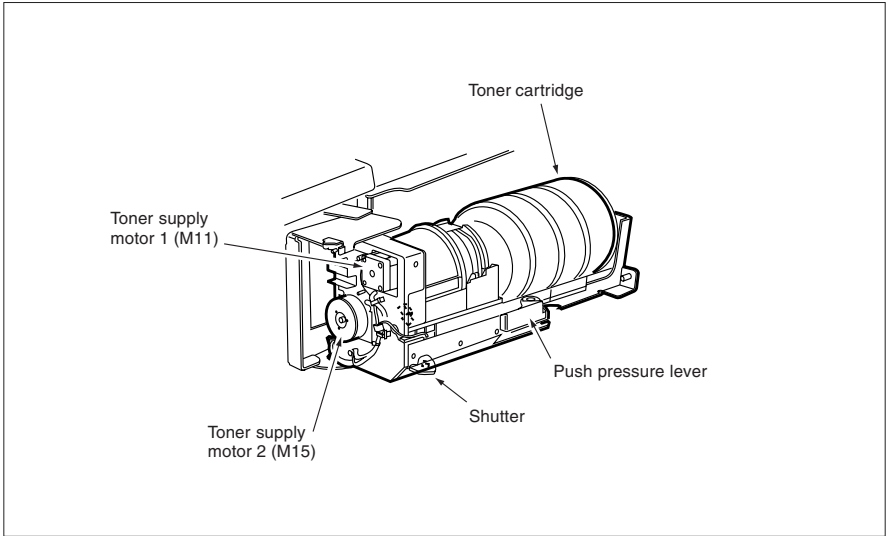
FM2 drive signal

[L]: FM2 OFF

[H]: FM2 ON

TONER SUPPLY UNIT

[1] Composition



[2] Mechanisms

| Mechanism | Method |
|--------------------------|--------------------------------------|
| Toner supply | Supply by screw |
| Toner level detection | Piezoelectric method 130±30 g |
| *1 Toner agitation | Agitator plates |
| *2 Toner cartridge | Rotary cartridge Capacity: 1700 g |
| Toner leakage prevention | Toner supply shutter |

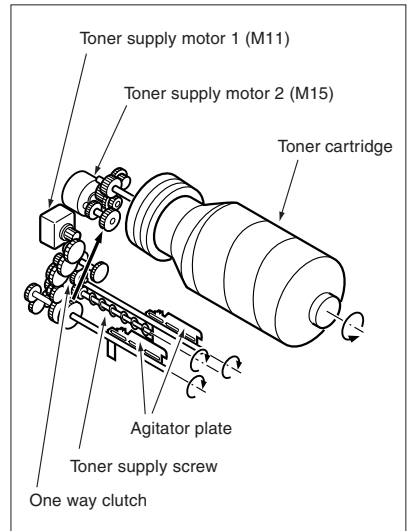
*1 Toner agitation

Toner agitator plates are driven by the following two motors through the gear unit:

- Toner supply motor 1 (M11): Drives the toner supply screw.
- Toner supply motor 2 (M15): Drives the toner cartridge.

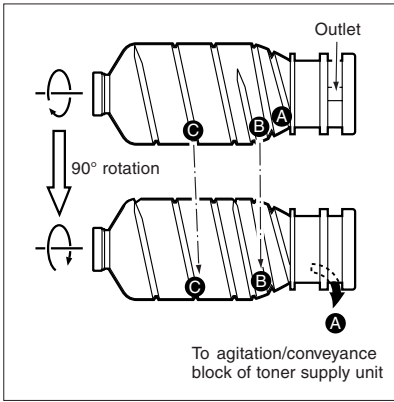
The agitator plates rotate faster when toner supply motor 1 (M11) runs than when toner supply motor 2 (M15) runs. When the two motors are running simultaneously, the one-way clutch installed on the agitator shaft selects toner supply motor 2 (M15).

The agitator plates prevent the toner from clumping and accumulating on TLD (remaining toner detection sensor).

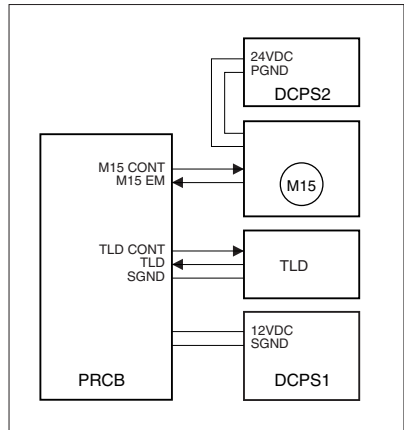


*2 Toner cartridge

When the toner cartridge rotates, toner is fed to the outlet of the cartridge through the spiral groove on the surface of the toner cartridge. When the outlet of the cartridge faces downward, toner flows out of the outlet into the agitation/supply section of the toner supply unit.



[3] Toner Level Detection Control



Toner level detection is controlled by the TLD (toner level detection sensor) and the PRCB (printer control board).

1. Operation

a. Toner level detection

A piezoelectric device is used as the TLD. When the level of toner in the cartridge becomes low, the toner supply signal is output to the PRCB. As a result, a message is displayed on the LCD connected to the OB1 (operation board 1).

b. Detection timing

The detection timing is as follows:

- Power-on
- When the front door opens or closes
- During copying

c. Toner supply to toner supply unit

When the no toner state is detected by TLD, M15 (toner supply 2) is turned ON to supply toner from the toner cartridge to the toner supply unit.

d. Detection of no toner state in toner cartridge

If the no toner state is detected by TLD after M15 has been held ON for a specified period of time, the toner cartridge is assumed to be empty.

2. Signals

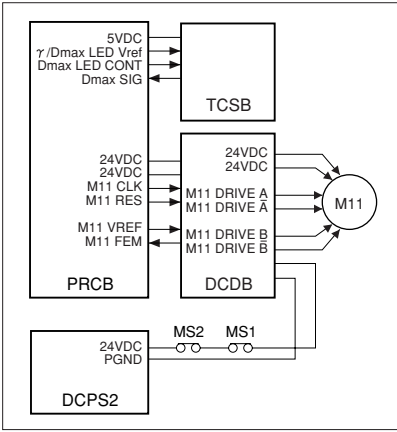
a. Input signal

- (1) TLD (TLD to PRCB)
When the level of toner in the cartridge becomes low, this signal goes low [L], displaying a message on the LCD connected to the OB1.
- (2) M15 EM (M15 to PRCB)
M15 fault detection signal.
[L]: M15 normal
[H]: M15 Abnormal

a. Output signals

- (1) TLD CONT (PRCB to TLD)
TLD power control signal.
The TLD is powered only when it is detecting the toner level.
- (2) M15 CONT (PRCB to M15)
M15 control signal
[L]: M15 ON
[H]: M15 OFF

[4] M11 (Toner Supply 1) Control



| Paper size | Supply time (sec.) |
|------------|--------------------|
| A3 | 1.14 |
| 11 x 17 | 1.14 |
| B4 | 0.86 |
| 8.5 x 14 | 0.86 |
| F4 | 0.86 |
| A4 | 0.57 |
| 8.5 x 11 | 0.57 |
| A4R | 0.57 |
| 8.5 x 11R | 0.57 |
| B5 | 0.43 |
| B5R | 0.43 |
| A5 | 0.29 |
| 5.5 x 8.5 | 0.29 |
| A6 | 0.22 |

M11 (Toner Supply 1) is controlled by the PRCB (printer control board) via the DCDB (DC drive board). The toner density is detected by TCSB(toner control sensor board).

When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motor, stopping M11.

1. Operation

a. Detection of toner density

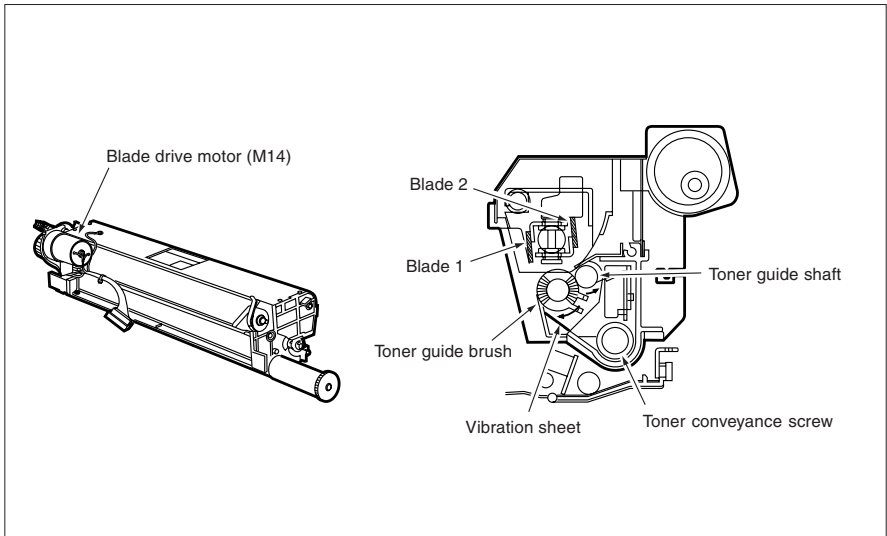
The Dmax sensor (PD1) mounted on the TCSB detects the density of the toner control chart to output the signal corresponding to the detected density to the PRCB.

b. Toner supply

When the voltage detected by the TCSB is below the specified value, the PRCB issues a control signal to drive the M11. The relationship between the paper size and toner supply time is summarized in the following table:

CLEANING/TONER RECYCLE UNIT

[1] Composition



[2] Mechanisms

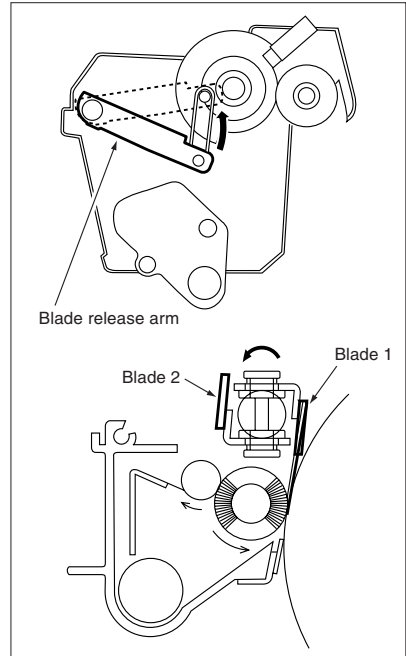
| | Mechanism | Method |
|----|------------------|---|
| *1 | Drum cleaning | Cleaning blades (switched automatically) |
| | Toner collection | Toner guide brush |
| *2 | Toner recycle | Toner conveyance by screw |

*1 Drum cleaning

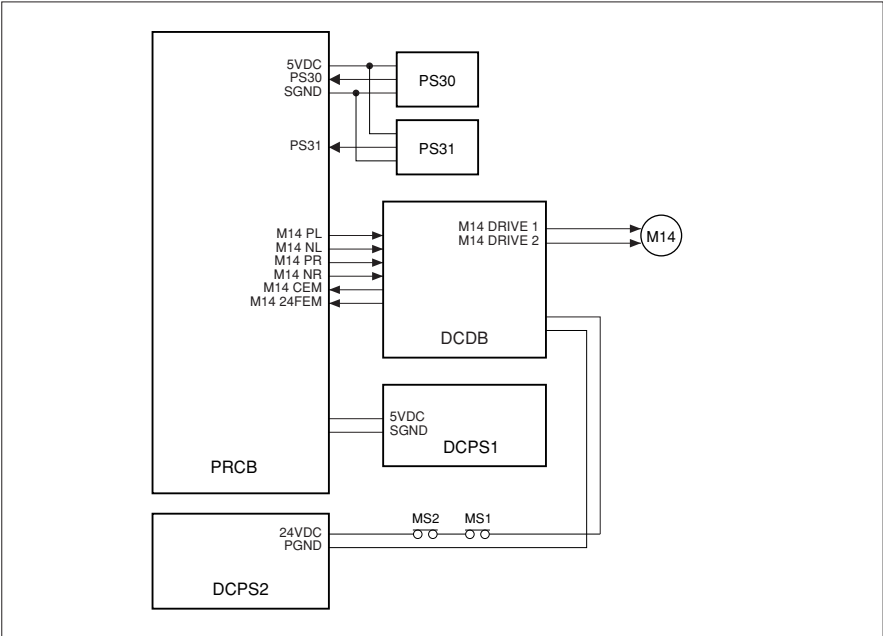
Two cleaning blades are installed in the cleaning section. When the blade motor (M14) rotates, the blade release arm is pressed down. At the same time, the cleaning blade drive shaft with two cleaning blades 1 and 2 is turned by the wire wound around the shaft, thereby switching between blades 1 and 2 automatically, increasing the usable life of the blades.

*2 Toner collection

Toner removed by the cleaning blade is collected by the toner guide brush to be reused.



[3] M14 (Blade) Control



M14 (cleaning blade) is a 24V DC driven motor and drives the cleaning blades. By M14, the cleaning blade contacts on the drum surface slight pressing or pressing to clean the drum surface. These two blades are automatically switched by M14. M14 is controlled by PR CB (printer control board) through DCDB (DC drive board). Related signals are PS30 (blade 1) and PS31 (blade 2).

1. Operation

M14 turns ON/OFF in synchronized with ON/OFF of M2(drum).
The blade is controlled (pressing, slight pressing, and switching) by PS30 and PS31 detecting the blade position, and M14 rotating forward and backward.
The following table shows the relationship between PS30/PS31 and blade position.

| Sensor | Blade Position | | | | |
|--------|----------------|------------|--------------------|------------|-----------|
| | Pressing | CW/ CCW | Slight pressing | CW/ CCW | Switching |
| PS30 | OFF | OFF | ON or OFF* | ON | ON |
| PS31 | ON | OFF | OFF | OFF | ON |

*Note: CW/CCW indicate the M14 rotating direction for pressing, slight pressing, and switching. The sensor logic for slight pressing position is different between CW and CCW rotation.
CCW: ON
CW: OFF

a. Blade auto switching control

This unit uses two blades with M14 rotating to automatically replace blades. During automatic blade replacement, M2 (drum), M3 (developing), developing bias, guide plate voltage, and PCL are turned ON, toner is adhered to the drum, and then the blade cleans it to prevent blade peeling.

<Timing>

- a) At the end of job after every 20,000 copies.

b. Blade setting mode

Blade setting mode is available in 36 mode as a task after blade replacement during maintenance. Blade setting mode adheres toner on drum as in blade auto replacement control and then the blade cleans toner to prevent blade peeling.

c. Black stripe creation control

In order to improve durability of the blade (stabilize load, prevent paper dust crushing), a black stripe toner is adhered on drum once every ten copies and then cleaned.

*Changeable with 25 mode DIPSW.

2. Signals**a. PRCB input signal**

- (1) PS30 (PS30 to PRCB)
Blade position detection signal 1
- (2) PS31(PS31 to PRCB)
Blade position detection signal 2
- (3) M14 CEM
M14 error detection signal
[L]: Normal
[H]: Error
- (4) M14 24FEM
M14 blown fuse detection signal
[L]: Not detected
[H]: Detected

b. PRCB output signal

- (1) M14 PL,NL,PR,NR(PRCB to DCDB)
M14 drive control signal

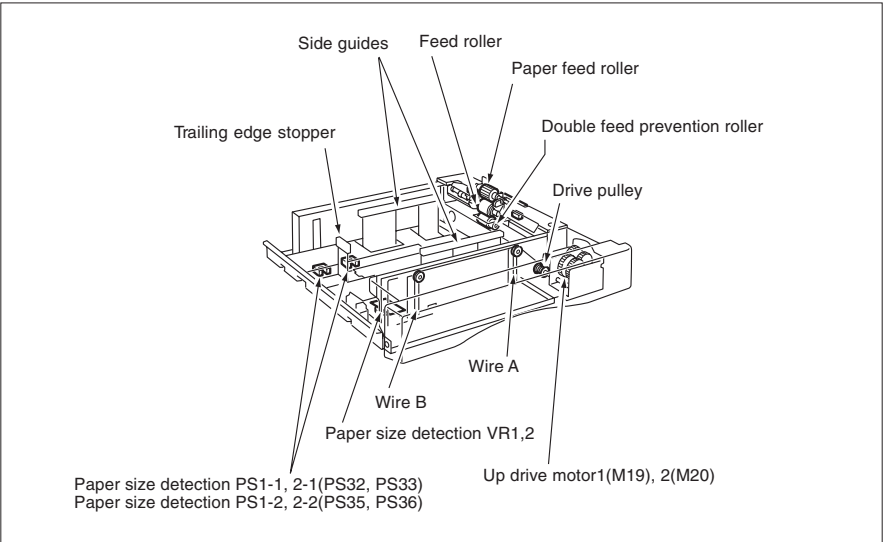
c. DCDB output signal

- (1) M14 DRIVE 1,2 (DCDB to M14)
M14 drive control signal

Blank page

TRAY 1/2 PAPER FEED UNIT

[1] Composition



Caution: Trays 1 and 2 have the same shape and mechanisms.

[2] Mechanisms

| | Mechanism | Method |
|----|----------------------------------|---|
| *1 | Paper lift-up | Up: Paper up/down plate driven by up/down wires Down: Falls down by its own weight |
| | Tray loading | Load from the front door side |
| | Double feed prevention | Torque limiter |
| *2 | 1st paper feed | Paper feed roller Pick up solenoid 1(SD8), 2(SD9) |
| | No paper detection | Photosensor + Actuator |
| *3 | Paper size detection (Universal) | Width: VR Length: Photosensor + Actuators (two) |

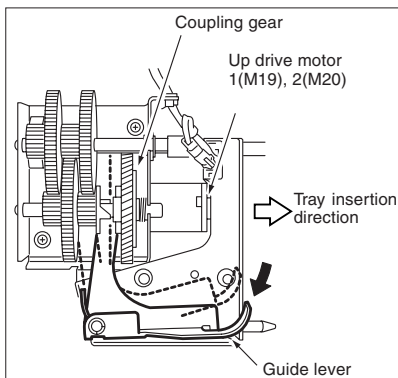
***1 Paper lift-up**

a. Hoisting of up/down plate

The up/down plate is lifted up by up/down wires. When the paper tray is loaded, the up drive motor 1(M19), 2(M20) rotates to wind the up/down wires around the drive pulleys and consequently the plate moves up and push up papers set in the tray. When the tray upper limit PS1(PS20), 2(PS21) detects the actuator of the plate that has moved up, the up drive motor 1(M19), 2(M20) stops.

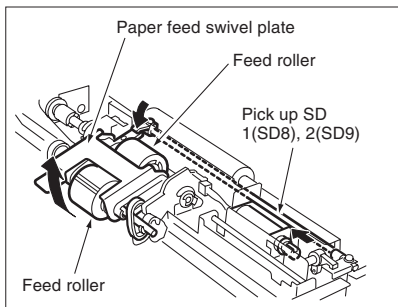
b. Lowering of up/down plate

When the paper feed tray is pulled out, the guide lever shown below is disengaged from the rail, thus releasing the coupling gear that transmits the drive force of the up drive motor 1(M19), 2(M20) to the drive pulleys. Then, the up/down plate falls down naturally by the weight of papers.



*2 1st paper feed

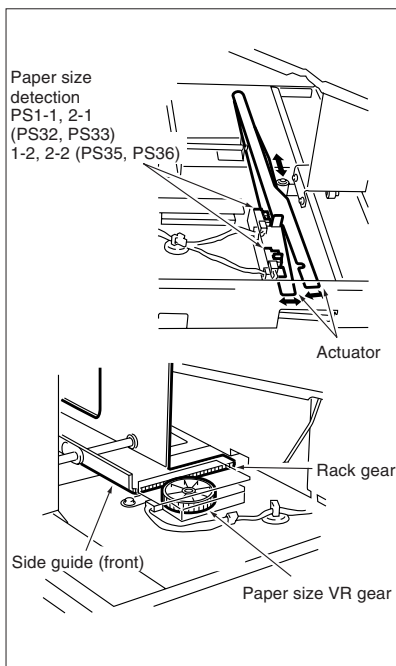
To keep a constant contact pressure on the paper by the paper feed roller at the time of paper pick-up, the weight of the paper feed roller itself is used. The pick up solenoid 1(SD8), 2(SD9) moves the paper feed swivel plate down so that the paper feed roller mounted on the plate falls down to touch the paper as well. Then, the paper feed roller picks up a paper and feeds it toward the paper conveyance unit. The first paper feed solenoid moves the paper feed swivel plate down only when paper is to be fed. Otherwise, it releases contact.



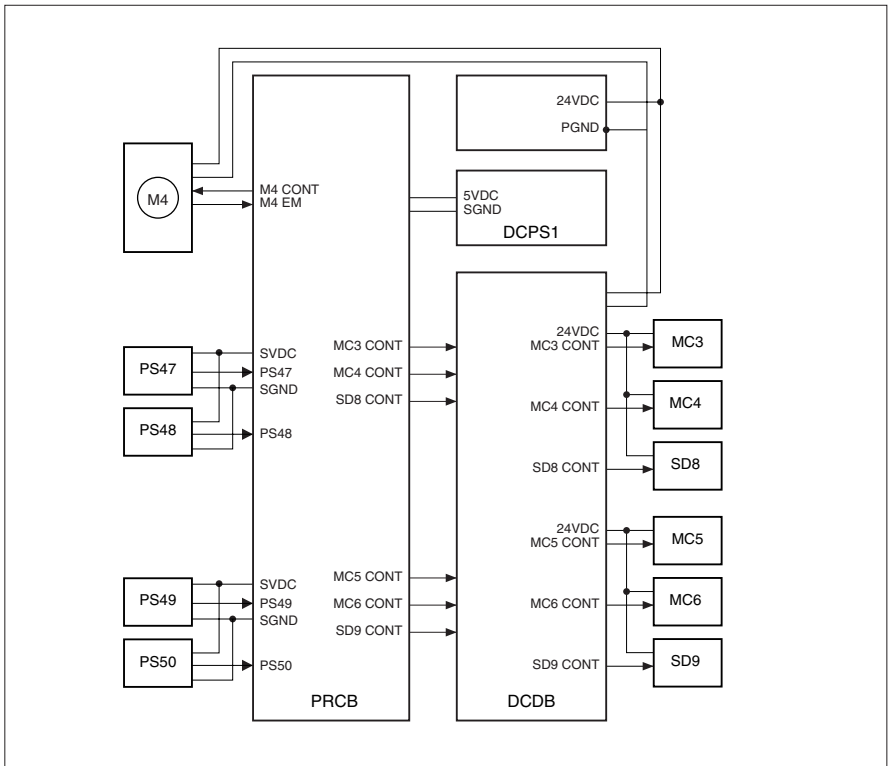
*3 Paper size detection

Length: The rear guide of the tray moves, causing the paper size detection actuator to move as well. As a result, the two paper size detection PS1-1, 2-1 (PS32, PS33), 1-2, 2-2 (PS35, PS36) turn ON and/or OFF. Thus, the paper size is automatically determined according to the combination of the ON/OFF states of these PSs.

Width: The side guide of the tray moves, causing the side guide (front) rack gear of the paper size detection arm to turn the gear of the paper size detection VR1, 2. Thus, the paper size is automatically determined according to the change in the resistance value of the VR.



[3] First Paper Feed Control



The 1st paper feed from tray 1 or 2 takes place as the result of the transmission of the drive force from M4 (paper feed) to each paper feed roller, via MC3 (feed MC 1), MC5 (feed MC 2), and MC4 (pre-registration MC1), MC6 (pre-registration MC 2). SD8 (pickup SD1) or SD9 (pickup SD 2) causes the roller to pick up paper. The above operations are controlled by the PRCB (printer control board). Related signals are PS47 (paper feed1), PS49 (paper feed 2), PS48 (pre-registration 1), and PS50 (paper pre-registration 2).

1. Operation

a. First paper feed timing (feed clutch drive)

- (1) When printing of the first copy starts:
Timing that is determined by the P counter from when copying starts
- (2) When printing of the second copy starts:
When PS47 or PS49 turns OFF
- (3) OFF timing
After a specified count from PS48, and PS50 turns ON (adjustable)
*Changeable in 36 mode

b. Feed timing (pre-registration clutch drive)

- (1) ON timing
When a drive signal is received from PRCB
- (2) OFF timing
When PS47 or PS49 is turned OFF.

2. Signals

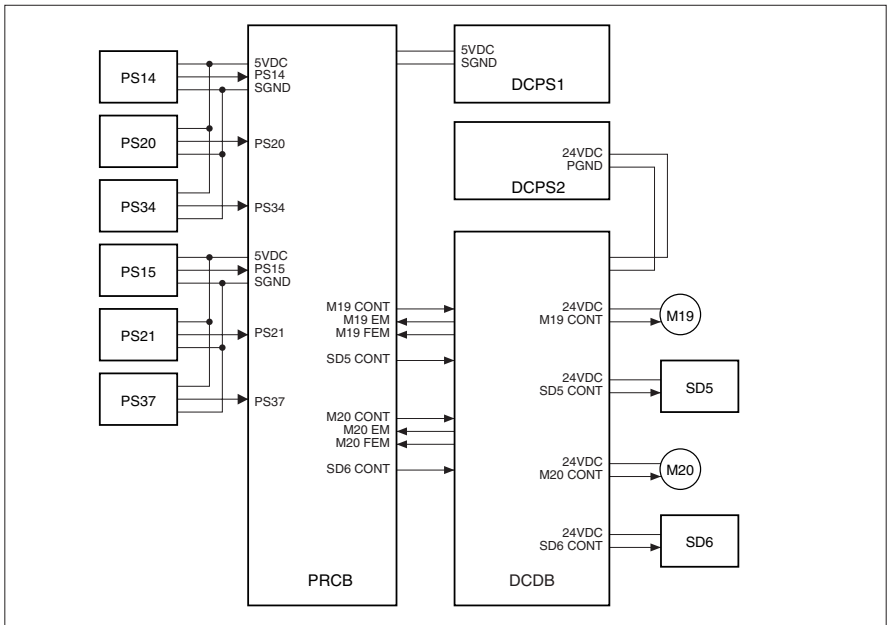
a. PRCB input signals

- (1) PS47 (PS47 to PRCB)
Paper passage detection signal (tray 1).
[L]: Paper passed.
[H]: Paper not passed.
- (2) PS49 (PS49 to PRCB)
Paper passage detection signal (tray 2).
[L]: Paper passed.
[H]: Paper not passed.
- (3) PS48 (PS48 to PRCB)
First paper feed paper detection signal (tray 1).
[L]: Paper exists.
[H]: Paper does not exist.
- (4) PS50 (PS50 to PRCB)
First paper feed paper detection signal (tray 2).
[L]: Paper exists.
[H]: Paper does not exist.

b. PRCB output signals

- (1) MC3 CONT (PRCB to DCDB to MC3)
MC3 drive control signal (tray 1).
[L]: MC3 ON
[H]: MC3 OFF
- (2) MC5 CONT (PRCB to DCDB to MC5)
MC5 drive control signal (tray 2).
[L]: MC5 ON
[H]: MC5 OFF
- (3) MC4 CONT (PRCB to DCDB to MC4)
MC4 drive control signal (tray 1).
[L]: MC4 ON
[H]: MC4 OFF
- (4) MC6 CONT (PRCB to DCDB to MC6)
MC6 drive control signal (tray 2).
[L]: MC6 ON
[H]: MC6 OFF
- (5) SD8 CONT (PRCB to DCDB to SD8)
SD8 drive control signal (tray 1).
[L]: SD8 ON
[H]: SD8 OFF
- (6) SD9 CONT (PRCB to DCDB to SD9)
SD9 drive control signal (tray 2).
[L]: SD9 ON
[H]: SD9 OFF

[4] Paper Up Drive Control



Papers stacked in the tray are pushed up by transmitting the drive force of M19 (up drive 1) or M20 (up drive 2) to the paper up/down plate in the tray via up/down wires. M19 and M20 are controlled by the PRCB (printer control board) via the DCDB (DC drive board). Related signals are PS20 (tray upper limit 1), PS21 (tray upper limit 2), PS34 (remaining paper detection 1), and PS37 (remaining paper detection 2). To prevent pull-out of tray during copying operation that cause paper jamming, a tray lock mechanism is implemented by PS14 (handle release 1), PS15 (handle release 2), SD5 (lock SD1), and SD6 (lock SD2).

1. Operation

a. Paper up drive control

When tray 1 or 2 is loaded, M19 or M20 goes ON for a fixed time, raising the paper up/down plate in the tray. When PS20 or PS21 detects the upper limit of paper as the paper up/down

plate in the tray goes up, it goes ON and consequently M19 or M20 goes OFF, stopping raising the paper up/down plate. When PS20 or PS21 goes OFF after a paper is fed, M19 or M20 goes ON again, moving the paper up/down plate upward. The up/down plate in the tray is lowered mechanically by its own weight.

b. Paper up drive timing

(1) ON timing

M19 or M20 is turned ON when loading of a tray is detected (by shorting wires at both ends of the drawer connector) or when PS26 or PS27 is turned ON.

(2) OFF timing

M19 or M20 is turned OFF when PS20 or PS21 is turned ON.

c. Remaining Paper Detection

The level of paper remaining in each tray is detected according to the time that M19 or M20 requires to lift up the paper up/down plate when the tray is set. This lift-up time (operation time of M19 or M20) is recorded in the PRCB. Subsequently, remaining paper is detected by the paper feed counter. The detected remaining paper level is displayed on the operation panel in 4 steps. PS34 and PS37 are used to detect the remaining paper level when it lowers below about 10%.

d. Tray lock control

When the tray handle is gripped, PS14 or PS15 is turned ON. This signal then causes SD5 or SD6 to go ON, releasing the lock.

2. Signals**a. PRCB input signals**

- (1) PS14 (PS14 to PRCB)
Tray drawer handle detection signal (tray 1).
[L]: Detected
[H]: Not detected
- (2) PS15 (PS15 to PRCB)
Tray drawer handle detection signal (tray 2).
[L]: Detected
[H]: Not detected
- (3) PS20 (PS20 to PRCB)
Paper upper limit detection signal (tray 1).
[L]: Detected
[H]: Not detected
- (4) PS21 (PS21 to PRCB)
Paper upper limit detection signal (tray 2).
[L]: Detected
[H]: Not detected
- (5) PS34 (PS34 to PRCB)
Remaining paper detection signal (tray 1).
[L]: Detected
[H]: Not detected
- (6) PS37 (PS37 to PRCB)
Remaining paper detection signal (tray 2).
[L]: Detected
[H]: Not detected
- (7) M19 EM (DCDB to PRCB)
M19 fault (excessive current) detection signal (tray 1).
[L]: Normal
[H]: Abnormal

- (8) M19 FEM (DCDB to PRCB)

Signal indicating whether M19's 24V fuse is blown (tray 1)

[L]: Not detected

[H]: Detected

- (9) M20 EM (DCDB to PRCB)

M20 fault (excessive current) detection signal (tray 2)

[L]: Normal

[H]: Abnormal

- (10) M20 FEM (DCDB to PRCB)

Signal indicating whether M20's 24V fuse is blown (tray 2)

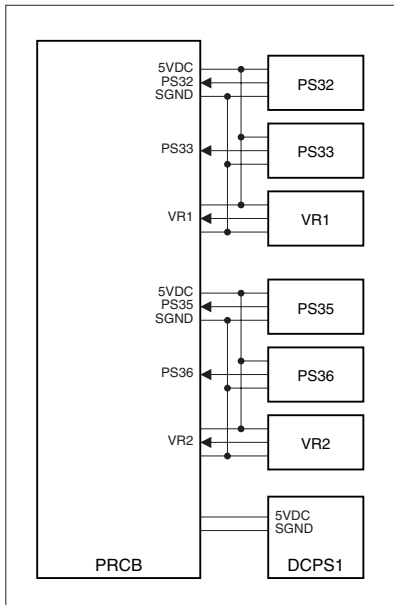
[L]: Not detected

[H]: Detected

b. PRCB output signals

- (1) M19 CONT (PRCB to DCDB to M19)
M19 ON/OFF control signal (tray 1).
[L]: M19 ON
[H]: M19 OFF
- (2) M20 CONT (PRCB to DCDB to M20)
M20 ON/OFF control signal (tray 2).
[L]: M20 ON
[H]: M20 OFF
- (3) SD5 CONT (PRCB to DCDB to SD5)
SD5 drive control signal (tray 1).
[L]: SD5 ON
[H]: SD5 OFF
- (4) SD6 CONT (PRCB to DCDB to SD6)
SD6 drive control signal (tray 2).
[L]: SD6 ON
[H]: SD6 OFF

[5] Paper Size Detection Control



The paper size in tray 1/2 is detected using PS32 (paper size 1-1), PS33 (paper size 2-1), PS35 (paper size 1-2), PS36 (paper size 2-2), paper size detection VR1, and paper size detection VR2. Based on the detection signals, the PRCB (printer control board) judges the paper size.

1. Operation

The length of paper is detected using PS32, PS33, PS35, and PS36. Variable resistors (VR1 and VR2) are installed at the bottom of the tray to detect the width of paper.

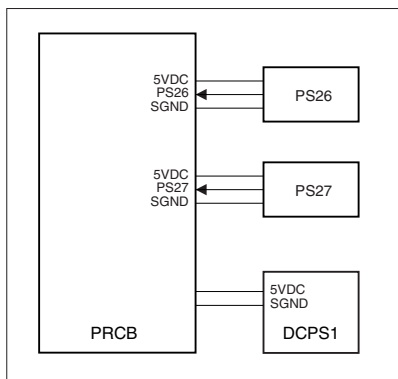
The relationships between the switches and paper sizes (lengths) are as follows:

| Paper size Switch | 8.5 x 11 or less | A4R to B5R | F4 | 8.5 x 14 or larger |
|----------------------|---------------------|---------------|----|-----------------------|
| PS32 or PS35 | OFF | OFF | ON | ON |
| PS33 or PS36 | OFF | ON | ON | OFF |

2. Signals

a. Input signals

- (1) PS32 (PS32 to PRCB)
Paper size detection switch ON/OFF signal (tray 1)
- (2) PS33 (PS33 to PRCB)
Paper size detection switch ON/OFF signal (tray 1)
- (3) PS35 (PS35 to PRCB)
Paper size detection switch ON/OFF signal (tray 2)
- (4) PS36 (PS36 to PRCB)
Paper size detection switch ON/OFF signal (tray 2)
- (5) VR1 (VR1 to PRCB)
Paper width detection signal (tray 1)
- (6) VR2 (VR2 to PRCB)
Paper width detection signal (tray 2)

[6] No paper detection control

No paper in the tray is detected by PS26 (no paper 1) and PS27 (no paper 2) which are controlled by the PRCB (printer control board).

1. Operation

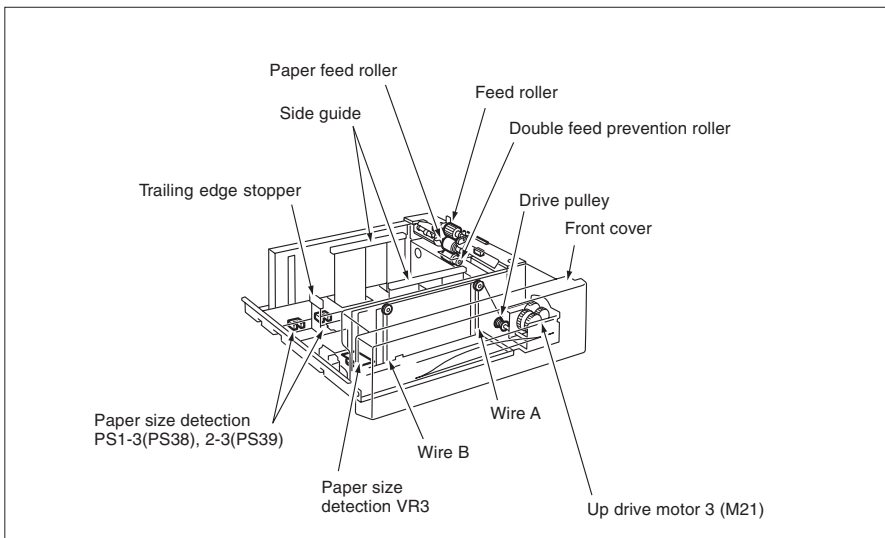
When the tray becomes empty, PS26 or PS27 is turned ON, displaying a message on LCD via the OB1 (operation board 1).

2. Signals**a. Input signals**

- (1) PS26 (PS26 to PRCB)
No paper detection signal (tray 1)
[L]: Paper does not exist in tray
[H]: Paper exists in tray
- 2) PS27 (PS27 to PRCB)
No paper detection signal (tray 2)
[L]: Paper does not exist in tray
[H]: Paper exists in tray

TRAY 3 PAPER FEED UNIT

[1] Composition



[2] Mechanisms

| | Mechanism | Method |
|----|----------------------------------|---|
| *1 | Paper lift-up | Up: Paper up/down plate driven by up/down wires Down: Falls down by its own weight |
| | Tray loading | Front loading |
| *2 | Double feed prevention | Torque limiter |
| | 1st paper feed | Paper feed roller Pick up solenoid 3 (SD10) |
| *3 | No paper detection | Photosensor + Actuator |
| | Paper size detection (Universal) | Width: VR Length: Photosensor + Actuators (two) |

*1 Paper lift-up

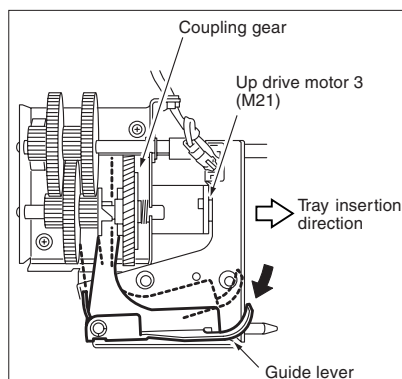
a. Hoisting of up/down plate

The up/down plate is lifted up by up/down wires. When the paper tray is loaded, the up drive motor 3 (M21) rotates to wind the up/down wires around the drive pulleys and consequently the plate moves up. When the tray upper limit PS3 (PS22) detects the actuator of the plate that has moved up, the up drive motor 3 (M21) stops.

TRAY 3 PAPER FEED UNIT

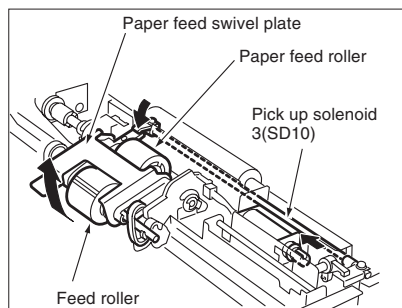
b. Lowering of up/down plate

When the paper feed tray is pulled out, the guide lever shown below is disengaged from the rail, thus releasing the coupling gear that transmits the drive force of the up drive motor 3 (M21) to the drive pulleys. Then, the up/down plate falls down mechanically by the weight of papers.



*2 1st paper feed

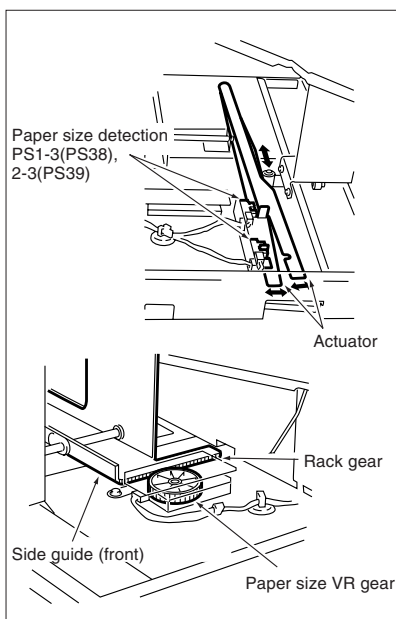
To keep constant contact pressure on the paper by the paper feed roller at the time of paper pick-up, the weight of the paper feed roller itself is used. The pick up solenoid 3 (SD10) moves the the paper feed swivel plate down so that the paper feed roller mounted on the plate falls down to touch the paper as well. Then, the paper feed roller picks up a paper and feeds it toward the paper conveyance unit. The first paper feed solenoid moves the paper feed swivel plate down only when paper is to be fed. Otherwise, it releases contact.



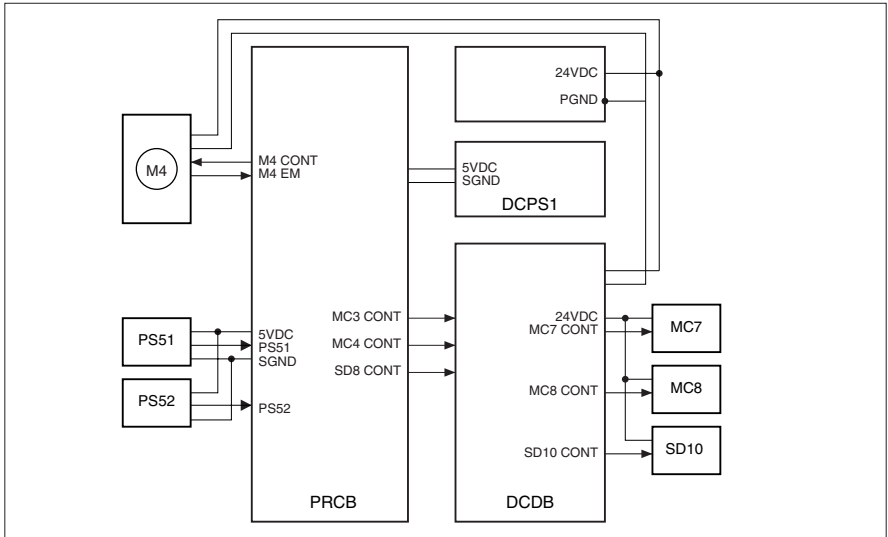
*3 Paper size detection

Length: The rear guide of the tray moves, causing the paper size detection actuator to move as well. As a result, the two paper size detection PS1-3 (PS38), 2-3 (PS39) turn ON and/or OFF. Thus, the paper size is automatically determined according to the combination of the ON/OFF states of these PSs.

Width: The side guide of the tray moves, causing the side guide (front) rack gear to turn the gear of the paper size detection VR3. Thus, the paper size is automatically determined according to the change in the resistance value of the VR.



[3] First Paper Feed Control



The 1st paper feed from tray 3 takes place as the result of the transmission of the drive force from M4 (paper feed) to each paper feed roller, via MC7 (feed MC3) and MC8 (pre-registration MC3). SD10 (pick up SD3) causes the roller to pick up paper. The above operations are controlled by the PRCB (printer control board). Related signals are PS51 (paper feed 3), and PS52 (paper pre-registration 3).

1. Operation

a. First paper feed timing (feed clutch drive)

- (1) When printing of the first copy starts
Timing that is determined by the P counter from when copying starts
- (2) When printing of the second copy starts
When PS51 turns OFF after the first paper feed detection
- (3) OFF timing
After a specified count from PS50 turns ON
*Changeable in 36 mode

b. Feed timing (pre-registration clutch drive)

- (1) ON timing
When a drive signal is received from PRCB
- (2) OFF timing
When PS51 is turned OFF.

2. Signals

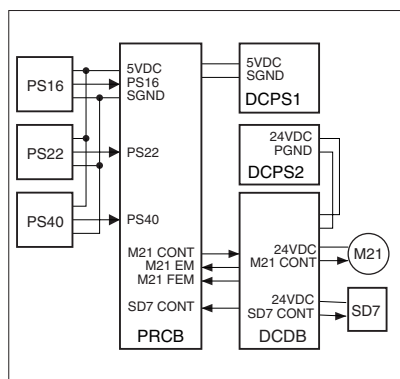
a. PRCB input signals

- (1) PS51 (PS51 to PRCB)
Paper passage detection signal
[L]: Paper passed.
[H]: Paper not passed.
- (2) PS52 (PS52 to PRCB)
First paper feed paper detection signal.
[L]: Paper exists.
[H]: Paper does not exist.

b. CB output signals

- (1) MC7 CONT (PRCB to DCDB to MC7)
MC7 drive control signal (tray 1).
[L]: MC7 ON
[H]: MC7 OFF
- (2) MC8 CONT (PRCB to DCDB to MC8)
MC8 drive control signal (tray 2).
[L]: MC8 ON
[H]: MC8 OFF
- (3) SD10 CONT (PRCB to DCDB to SD10)
SD10 drive control signal (tray 1)
[L]: SD10 ON
[H]: SD10 OFF

[4] Paper Up Drive Control



Papers stacked in the tray are pushed up by transmitting the drive force of M21 (up drive 3) to the paper up/down plate in the tray via up/down wires. M21 is controlled by the PRCB (printer control board) via the DCDB (DC drive board). The related signals are PS22 (tray upper limit 3) and PS40 (remaining paper detection 3). To prevent pull-out of tray during copying operation that cause paper jamming, a tray lock mechanism is implemented by PS16 (handle release 3) and SD7 (lock SD3).

1. Operation

a. Paper up drive control

When tray 3 is loaded, M21 goes ON for a fixed time, raising the paper up/down plate in the tray. When PS22 detects the upper limit of paper as the paper up/down plate in the tray goes up, it goes ON and consequently M21 goes OFF, stopping raising the paper up/down plate. When PS22 goes OFF after a paper is fed, M21 goes ON again, moving the paper up/down plate upward. The paper up/down plate in the tray is lowered mechanically by its own weight.

b. Paper up drive timing

(1) ON timing

M21 is turned ON when loading of a tray is detected (by shorting wires at both ends of the drawer connector) or when no paper is detected.

(2) OFF timing

M21 is turned OFF when PS22 is turned ON.

c. Remaining Paper Detection

The level of paper remaining in each tray is detected according to the time that M21 requires to lift up the paper up/down plate when the tray is set. This lift-up time (operation time of M21) is recorded in the PRCB. Subsequently, remaining paper is detected by the paper feed counter. The detected remaining paper level is displayed on the operation panel in 5 steps. PS40 is used to detect the remaining paper level when it drops below about 10%.

d. Tray lock control

When the tray handle is gripped, PS16 is turned ON. This signal then causes SD7 to go ON, releasing the lock.

2. Signals

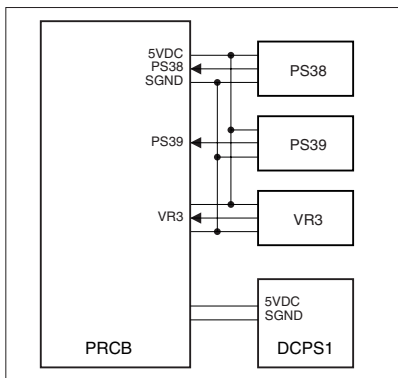
a. PRCB input signals

- (1) PS16 (PS16 to PRCB)
Tray drawer handle detection signal
[L]: Detected
[H]: Not detected
- (2) PS22 (PS22 to PRCB)
Paper upper limit detection signal
[L]: Not detected
[H]: Detected
- (3) PS40 (PS40 to PRCB)
Remaining paper detection signal
[L]: Detected
[H]: Not detected
- (4) M21 EM (DCDB to PRCB)
M21 fault (excessive current) detection signal
[L]: Normal
[H]: Abnormal
- (5) M21 FEM (DCDB to PRCB)
Signal indicating if M21's 24V fuse is blown
[L]: Not detected
[H]: Detected

b. PRCB output signals

- (1) M21 CONT (PRCB to DCDB to M21)
M21 ON/OFF control signal
[L]: M21 ON
[H]: M21 OFF
- (2) SD7 CONT (PRCB to DCDB to SD7)
SD7 drive control signal
[L]: SD7 ON
[H]: SD7 OFF

[5] Paper Size Detection Control



The paper size in tray 3 is detected using PS38 (paper size 1-3), PS39 (paper size 2-3) and paper size detection VR3. Based on the detection signals, the PRCB (printer control board) judges the paper size.

1. Operation

The length of paper is detected using PS38 and PS39. A variable resistor (VR3) is installed at the bottom of the tray to detect the width of paper.

The relationships between the switches and paper sizes (lengths) are as follows:

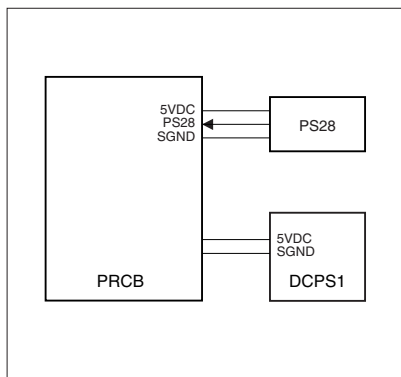
| Paper size | 8.5 x 11 or less | A4R to B5R | F4 | 8.5 x 14 or larger |
|------------|------------------|------------|----|--------------------|
| Switch | | | | |
| PS38 | OFF | OFF | ON | ON |
| PS39 | OFF | ON | ON | OFF |

2. Signals

a. Input signals

- (1) PS38 (PS38 to PRCB)
Paper size detection switch ON/OFF signal
- (2) PS39 (PS39 to PRCB)
Paper size detection switch ON/OFF signal
- (3) VR3 (VR3 to PRCB)
Paper width detection signal

[6] No paper detection control



No paper in the tray is detected by PS28 (no paper 3) which is controlled by the PRCB (printer control board).

1. Operation

When the tray becomes empty, PS28 is turned ON, displaying a message on the LCD via the OB1 (operation board 1).

2. Signal

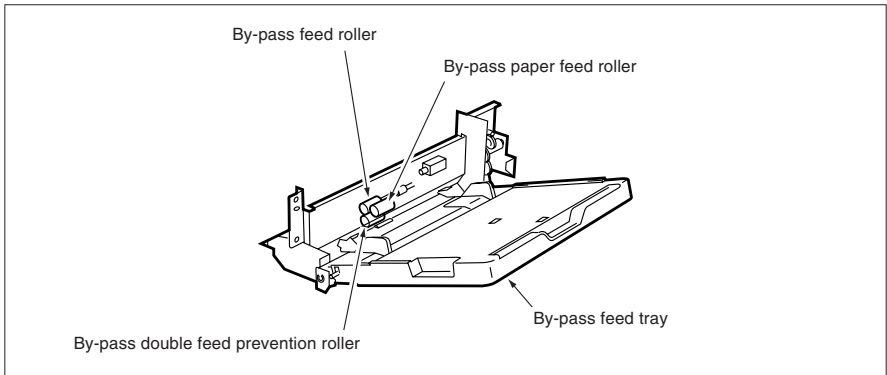
a. Input signals

- (1) PS28 (PS 28 to PRCB)
No paper detection signal
[L]: Paper does not exist in tray
[H]: Paper exists in tray

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BY-PASS TRAY

[1] Composition

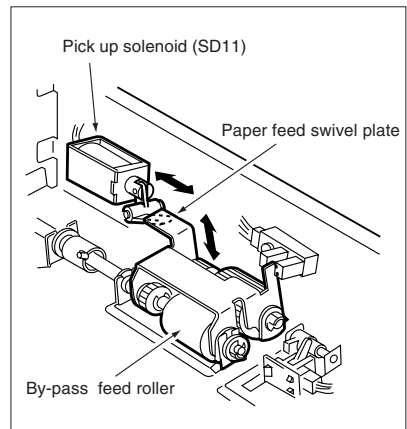


[2] Mechanisms

| | Mechanism | Method |
|----|------------------------|---|
| *1 | First paper feed | Swivel roller Pick up solenoid (SD11) |
| *2 | Paper lift-up | Paper up/down plate Up/down motor (M22) (by-pass tray) |
| | Double feed prevention | Torque limiter |
| | No paper detection | Photosensor |
| *3 | Paper size detection | Paper size detection PS (PS55/PS56), |

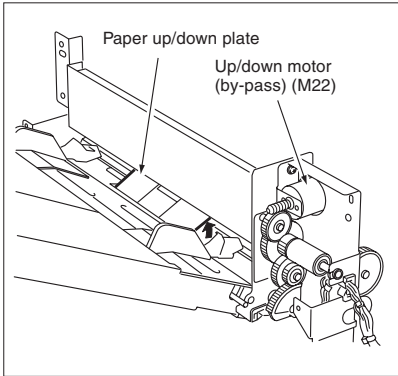
*1 By-pass paper feed roller

To keep constant contact pressure on the paper by the paper feed roller at the time of paper pick-up, the weight of the paper feed roller itself is used. The pick up solenoid (SD11) moves the paper feed swivel plate down (when the roller is rotating) so that the paper feed roller mounted on the plate falls down to touch the paper as well. Then, the paper feed roller picks up a paper and feeds it toward the paper conveyance section. The first paper feed solenoid moves the paper feed swivel plate down only when paper is to be fed. Otherwise, it releases contact.



*2 Paper lift-up

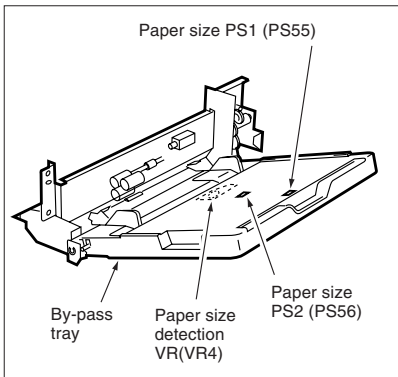
When paper is set in the bypass tray, the up/down motor (by-pass) (M22) drives the paper up/down plate via gears. Paper is automatically pushed up to the paper feed position.



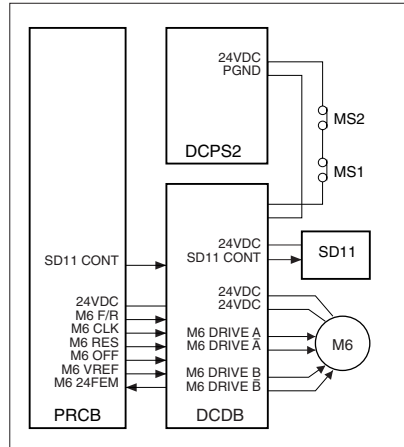
*3 Paper size detection

The paper size is automatically detected by the following three sensors:

- Lateral: Paper size detection VR (VR4)
- Longitudinal: Paper size PS 1/2 (PS55/PS56)



[3] First Paper Feed Control



The 1st paper feed from the by-pass tray takes place as the result of the transmission of the drive force from M6 (loop roller) to the paper feed roller. SD11 (pick up (by-pass tray)) moves up and releases the paper feed roller contacting to the paper after the roller picked up and fed the first paper to the feed roller side to facilitate paper feeding.

The above operations are controlled by the PRCB (printer control board).

1. Operation

a. First paper feed operation timing

Controlled at M6 ON/OFF timings and by M6 rotation direction.

2. Signals

a. PRCB input signals

- (1) M6 24FEM (M6 to PRCB)

Signal indicating whether M6's 24 V fuse is blown.

[L]: Not detected

[H]: Detected

b. PRCB output signals

- (1) M6 CLK (PRCB to DCDB)

M6 clock signal

- (2) M6 RES (PRCB to DCDB)

M6 reset signal.

- (3) M6 OFF (PRCB to DCDB)

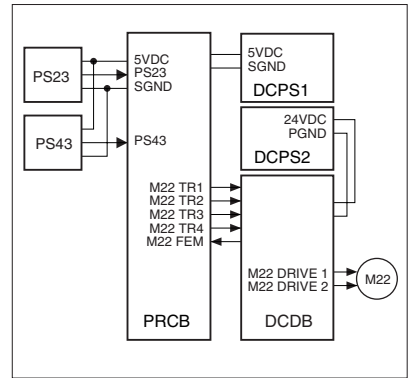
M6 deenergizing signal (L: Deenergized)

- (4) M6 VREF (PRCB to DCDB)
M6 current limitation signal. (L: ON)
- (5) M6 F/R (PRCB to DCDB to SD11)
M6 rotational direction switching signal (L: CW (bypass))
- (6) SD11 (PRCB to DCDB to SD11)
SD11 drive control signal (bypass tray).
[L]: SD11 ON
[H]: SD11 OFF

c. DCDB output signal

- (1) M6 DRIVE A, \bar{A}
M6 A-phase drive control pulse signal
- (2) M6 DRIVE B, \bar{B}
M6 B-phase drive control pulse signal

[4] Paper Up/down Control



By-pass tray paper is moved up and down by transmitting the drive force of M22 (up/down (by-pass)). M22 is controlled by the PRCB (printer control board) via the DCDB (DC drive board). Related signals are PS23 (tray upper limit (by-pass tray)) and PS43 (tray lower limit (by-pass tray)).

1. Operation

a. Paper up/down control

M22 is turned ON a fixed time to push up paper. When PS23 is turned ON, M22 is turned OFF to stop pushing up paper. M22 turns ON once more to maintain the upper limit position of the paper.

b. Paper up timing

- (1) ON timing
At start of copying
- (2) OFF timing
M22 is turned OFF when PS23 is turned ON.

c. Paper down timing

- (1) ON timing
Turns ON when there is no paper or when paper jams.
- (2) OFF timing
M22 is turned OFF when PS43 is turned ON.

2. Signals

a. PRCB input signals

(1) PS23 (PS23 to PRCB)

Paper upper limit position detection signal (by-pass tray).

[L]: Detected

[H]: Not detected

(2) PS43 (PS43 to PRCB)

Paper lower limit position detection signal (by-pass tray).

[L]: Detected

[H]: Not detected

(3) M22 FEM (DCDB to PRCB)

Signal indicating whether M22's 24 V fuse is blown (by-pass tray)

[L]: Not detected

[H]: Detected

b. PRCB output signal

(1) M22 TR1-4 (PRCB to DCDB)

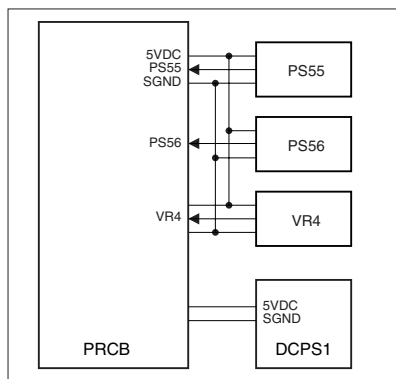
M22 drive control signal.

c. DCDB output signal

(1) M22 DRIVE 1, 2 (DCDB to M22)

M22 drive control signal

[5] Paper Size Detection Control



The size of paper in the by-pass tray is detected by PS55 (paper size 1 (by-pass tray)), PS56 (paper size 2 (by-pass tray)), and VR4 (paper size detection (by-pass tray)). Based on the detection signals, the PRCB (printer control board) judges the paper size.

1. Operation

The length of paper is detected using PS55 and PS56. The by-pass tray is provided with a variable resistor (VR4) interlocked with the guide position to judge the width of paper according to the change in the resistance value.

2. Signals

a. Input signals

(1) PS55 (PS55 to PRCB)

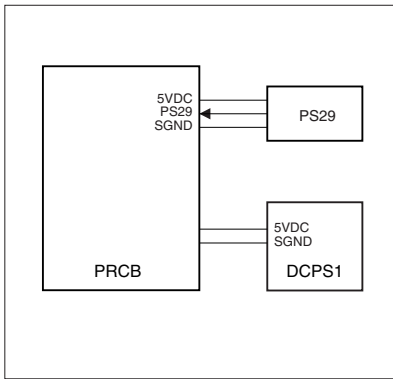
Paper size detection switch ON/OFF signal

(2) PS56 (PS56 to PRCB)

Paper size detection switch ON/OFF signal

(3) VR4 (VR4 to PRCB)

Paper width detection signal

[6] No paper detection control

No paper in the tray is detected by PS29 (no paper (by-pass tray)) which is controlled by the PRCB (printer control board).

1. Operation

When the tray becomes empty, PS29 is turned ON, displaying a message on the LCD via the OB1 (operation board 1).

2. Signals**a. Input signals****(1) PS29 (PS29 to PRCB)**

No tray paper detection signal

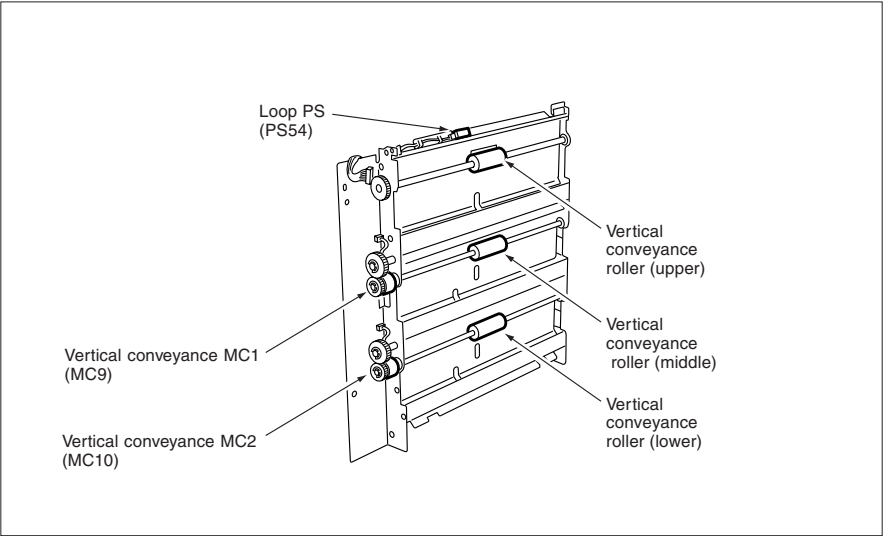
[L]: Paper does not exist in tray.

[H]: Paper exists in tray.

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VERTICAL PAPER CONVEYANCE SECTION

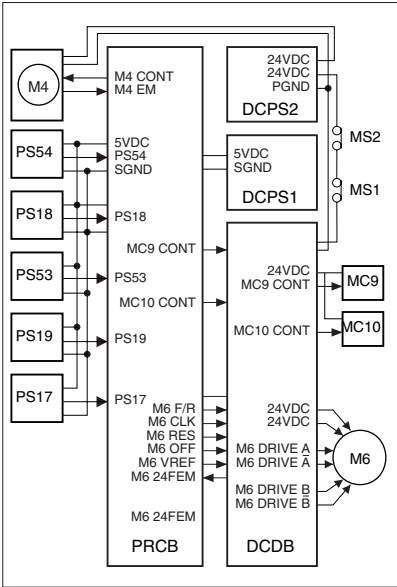
[1] Composition



[2] Mechanisms

| Mechanism | Method |
|------------------|---|
| Paper conveyance | Rollers |
| Conveyance drive | Vertical conveyance roller (upper): Loop roller motor (M6) Vertical conveyance roller (middle): Paper feed motor (M4) Vertical conveyance roller (lower): Paper feed motor (M4) |

[3] Vertical Paper Conveyance Control



In the vertical paper conveyance section, paper is fed vertically by transmitting the drive force of M4 (paper feed) to the vertical conveyance middle and lower rollers via MC9 (vertical conveyance MC1) and MC10 (vertical conveyance MC2). The upper roller is driven by M6 (loop roller). The above parts are controlled by the PRCB (printer control board) via DCDB (DC drive board). Related signals are PS18 (vertical conveyance 1), PS53 (vertical conveyance 2), PS19 (vertical conveyance 3), PS54 (loop), and PS17 (open/close detection).

When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motor, stopping M6.

1. Operation

Paper supplied from one of trays 1-3 is then fed to the second paper feed unit by the M4 and M6's drive force transmitted via MC9 and MC10. Since the linear velocity of the vertical conveyance middle and lower rollers driven by M4 is kept constant at high speed rotation, the vertical conveyance middle and lower rollers are stopped by turning off MC9 and MC10 while paper is fed by the registration roller at low speed. At this point the upper roller operates at low speed. In trays 2 and 3, the first paper feed operation starts earlier than the second paper feed operation starts. Accordingly, the paper condition in the second paper feed section is detected by PS53 to turn OFF MC9 and MC10, stopping the conveyance temporarily.

2. Signals

a. PRCB input signals

- (1) PS17 (PS17 to PRCB)
Vertical paper transport section opening/closing detection signal.
[L]: Open
[H]: Closed
- (2) PS18 (PS18 to PRCB)
Tray 1 exit paper passage detection signal (for jam detection)
[L]: Paper is detected.
[H]: Paper is not detected.
- (3) PS19 (PS19 to PRCB)
Tray 3 exit paper passage detection signal (for jam detection)
[L]: Paper is detected.
[H]: Paper is not detected.
- (4) PS53 (PS53 to PRCB)
Tray 2 exit paper passage detection signal (for timing detection)
[L]: Paper is detected.
[H]: Paper is not detected
- (5) PS54 (PS54 to PRCB)
M6 control timing detection signal.
[L]: Paper is detected.
[H]: Paper is not detected.
- (6) M4 EM (M4 to PRCB)
M4 fault detection signal
[L]: Abnormal
[H]: Normal

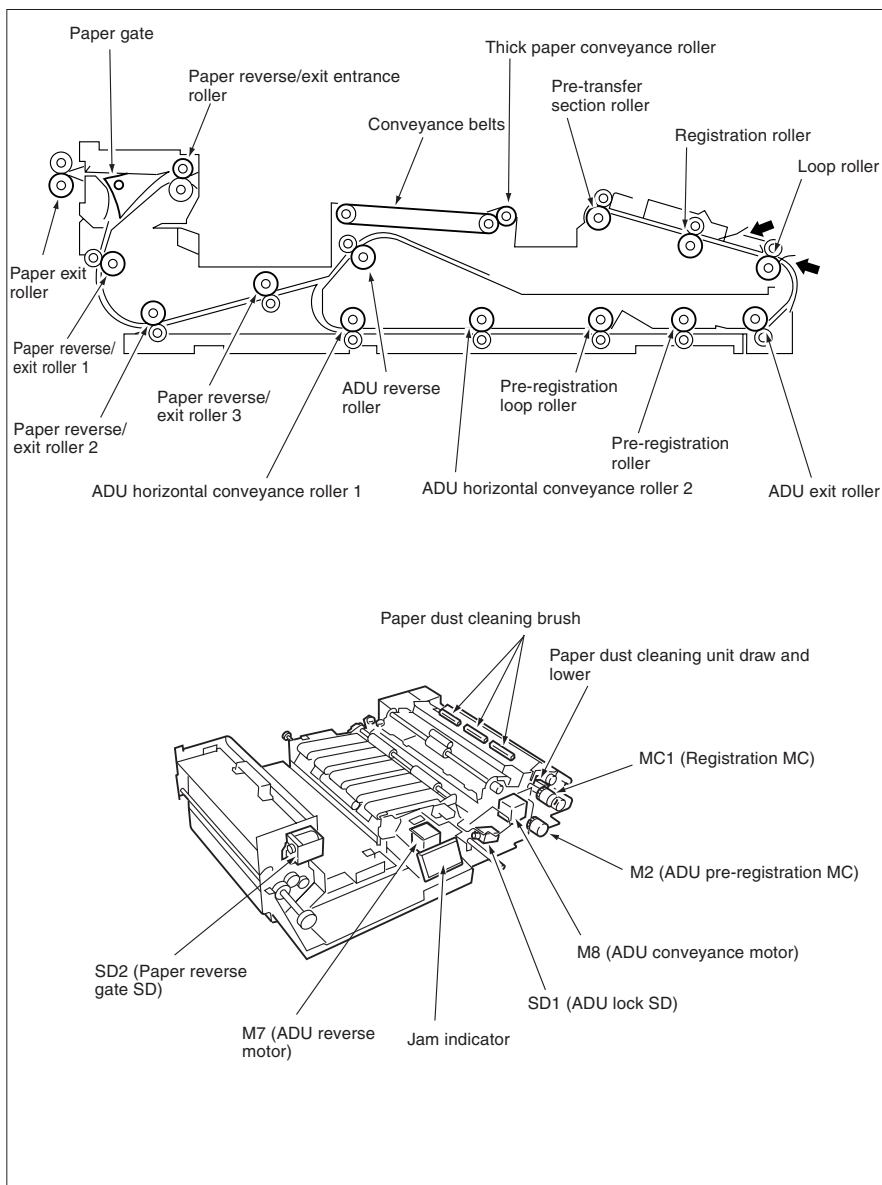
b. PRCB output signals

- (1) M4 CONT (PRCB to M4)
M4 drive control signal.
[L]: M4 ON
[H]: 4 OFF
- (2) MC9 CONT (PRCB to DCDB to MC 9)
MC9 drive control signal.
[L]: MC9 ON
[H]: MC9 OFF
- (3) MC10 CONT (PRCB to DCDB to MC10)
MC10 drive control signal.
[L]: MC10 ON
[H]: MC10 OFF

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ADU

[1] Composition



[2] Mechanisms

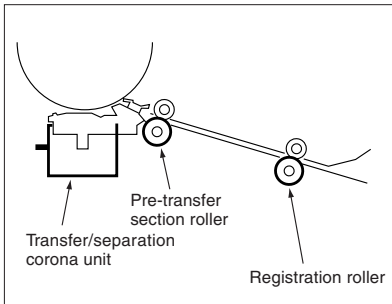
| | Mechanism | Method |
|-----|---|--|
| | Second paper feed paper loop | Loop roller |
| *1 | Second paper feed mis-centering correction | Write information is corrected according to the information detected by PS1 (paper mis-centering PS) |
| *2 | Second paper feed auxiliary mechanism | Pre-transfer section roller |
| | Second paper feed paper conveyance drive | Registration motor (M12) drive |
| *3 | Second paper feed jam removal mechanism | Jam removal by opening the paper registration and loop section Jam removal by opening the pre-transfer section Registration roller rotation knob |
| | Conveyance section paper conveyance | Conveyance belts (5) |
| *4 | Conveyance section thick paper conveyance auxiliary mechanism | Thick paper conveyance roller |
| *5 | Conveyance section paper suction mechanism | Developing suction fan (FM2) + Suction duct |
| *6 | Conveyance section jam removal mechanism | Conveyance unit opening/closing |
| *7 | Paper reverse/exit section paper path selection | Paper gate Paper reverse gate solenoid (SD2) drive |
| | Paper reverse/exit section paper conveyance | Paper reverse/exit section entrance roller (1) Paper reverse/exit rollers (3) |
| | Paper reverse/exit section paper conveyance drive | Paper reverse/exit motor(M5) drive |
| *8 | Paper reverse/exit section jam removal mechanism | Jam removal by opening the paper reverse/exit section jam access guide plate Jam removal by opening the paper reverse/exit section Paper reverse/exit roller rotation knob |
| *9 | ADU paper feed | Nonstack paper feed |
| | ADU reversed paper conveyance path selection | Automatically guided according to paper guide shape |
| | ADU paper conveyance | ADU reversal roller (1) ADU horizontal transport rollers (2) |
| *10 | ADU pre-registration mechanism | Pre-registration roller Pre-registration loop roller |
| | ADU paper ejection | ADU exit roller |
| | ADU paper conveyance drive | Loop roller motor (M6), ADU reverse motor(M7), ADU conveyance motor(M8), Transfer motor (M9), Registration motor (M12) |
| *11 | ADU carriage jam removal mechanism | Jam removal by opening the open/close guide A Jam removal by opening the open/close guide B |
| *12 | ADU carriage jam indication | Jam indication board |

*1 Second paper feed paper mis-centering correction

PS1 (paper mis-centering) is mounted at the exit of the registration roller to detect mis-centering or inclination of paper fed from the second paper feed unit. The image processor uses the mis-centering information detected by PS1 to correct the image write position, thus shifting or rotating the image write position on the mis-centered or inclined copy paper in order to match the document (scanned image) position with the copy paper position.

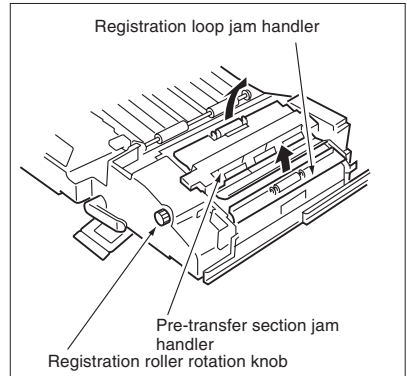
*2 Second paper feed auxiliary mechanism

The distance between the registration roller and the transfer and separation corona unit of this machine is made long to ensure image position correction operation. To assist paper conveyance between the registration roller and the image transfer and separation corona unit, a pre-transfer roller is provided just before the transfer and separation corona unit.



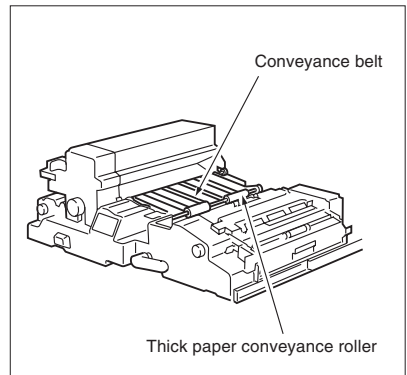
*3 Second paper feed unit jam removal mechanism

The registration roller is sandwiched between the registration loop jam removal section and the pre-transfer jam removal section. Jammed paper can be removed by opening the jam removal section and turning the registration roller rotation knob.

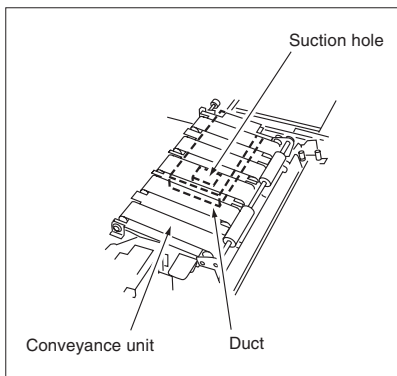


*4 Paper conveyance unit thick paper conveyance auxiliary mechanism

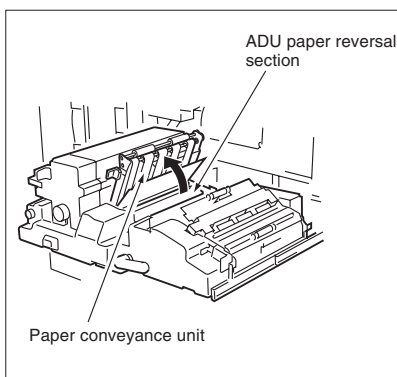
To facilitate feeding the thick paper fed from the transfer and separation corona unit, thick paper conveyance rollers are provided. The installation positions of thick paper conveyance rollers are fixed and they are also used to assist conveyance of paper other than thick paper.



- *5 Paper conveyance unit paper suction mechanism
A paper suction duct is provided in the middle of the paper conveyance and leads to the developing suction fan (FM2) installed at the back of the main unit. To improve the paper transportability in the paper conveyance unit, the paper suction fan and duct are used to suck the paper passing through the paper conveyance unit.



- *6 Paper conveyance unit jam removal mechanism
When a paper jam occurs in the paper reversal section in the ADU, the jammed paper can be removed by opening the paper conveyance unit.

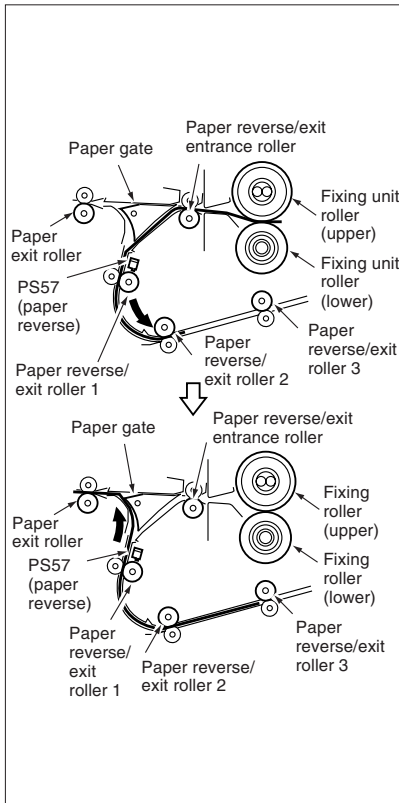


- *7 Paper path selection to paper reverse/exit section
The paper gate determines whether the paper fed out from the fixing unit is to be ejected straight, or reversed and ejected. The paper gate is operated by the ON/OFF operation of SD2 (paper reverse gate SD).

a. Paper reverse/exit operation

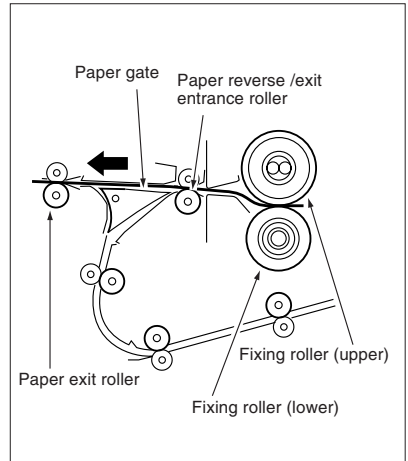
Normally, the paper gate opens when SD2 is turned OFF. The paper fed by the paper reverse /exit inlet roller is fed, through the path under paper gate, into the paper reverse/exit section. This paper is then fed to the ADU paper conveyance unit by paper reverse/exit rollers 1-3 (and paper reverse roller, when feeding a large size paper).

However, if PS57 (paper reverse) detects the trailing edge of the paper and consequently turns OFF, the rollers start rotating in the opposite direction, feeding the paper back to the paper gate. The fed back paper is fed to the paper exit roller, not to the paper reverse/exit entrance roller side, because of the shape of the paper gate. Thus, the paper is ejected to the paper exit with the print side down.



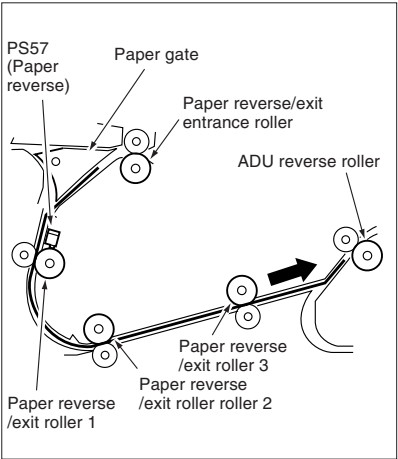
b. Straight ejection

When paper is ejected straight, SD2 is turned ON to close the paper gate. The paper fed by the paper reverse/exit entrance roller is fed through the path over the paper gate because this gate is closed, then fed to the paper exit roller. Thus, the paper is ejected to the paper exit with the print side up.



c. ADU paper conveyance

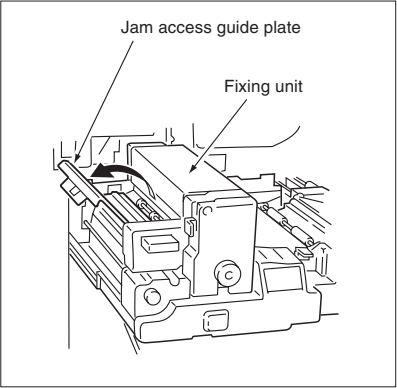
In the two-sided copy mode, the paper finished with printing on the front side is fed, through the path under the paper gate, into the paper reverse/exit section just like paper reverse/exit operation. Then, the paper is fed to the ADU unit by paper reverse and eject rollers 1-3. These rollers do not rotate in the opposite direction even when PS57 detects the trailing edge of the paper, allowing the paper to be fed to the ADU paper reversal roller.



*8 Paper reverse/exit section jam removal mechanism

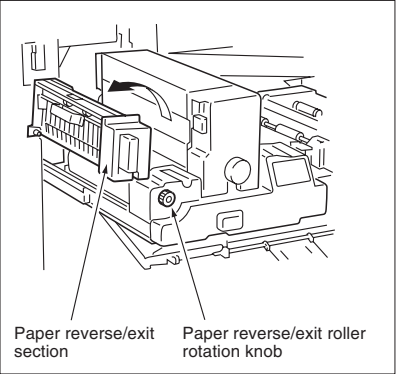
a. Jam access guide plate

When a jam occurs in the paper gate section, the jammed paper can be removed by opening the paper reverse/exit section jam access guide plate.



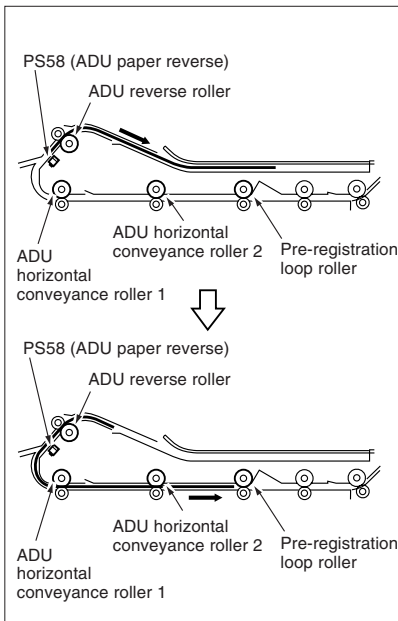
b. Jam removal from the paper reverse/exit section by paper reverse/exit roller rotation knob

When a jam occurs in the paper reverse/exit section, the jammed paper can be removed by opening the paper reverse/exit section and rotating the paper reverse/exit roller rotation knob.



*9 Nonstack paper feed mechanism

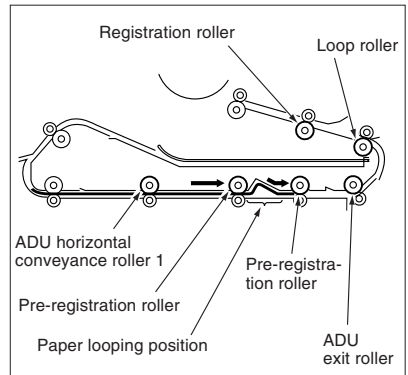
In the two-sided copy mode, the paper fed from the paper reverse/exit section is conveyed to the ADU section by the ADU reverse roller. When PS58 (ADU paper reverse) detects the trailing edge of paper and consequently turns OFF, the ADU reverse roller starts rotating in the opposite direction, feeding the paper backward. The fed back paper is conveyanced to the ADU horizontal conveyance roller, not the paper reverse/exit roller 3, because of the shape of the conveyance path plate. Thus, paper is reversed and fed to the ADU exit, sheet by sheet, without being stacked.



*10 ADU pre-registration mechanism

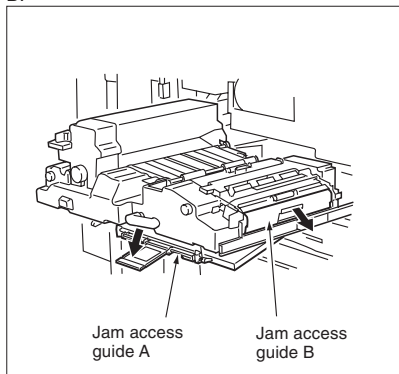
In the ADU, paper is looped by the pre-registration roller and pre-registration loop roller to correct paper inclination in the second paper feed unit.

The pre-registration roller is controlled by the ON/OFF operation of MC2 (ADU pre-registration MC). The pre-registration loop roller feeds paper at a constant speed with the pre-registration roller stopped by the OFF operation of MC2, forming a paper loop between these two rollers. As a result, paper inclination is corrected. When MC2 is turned ON, the pre-registration roller starts rotating to feed paper to the second paper feed section. Note that the pre-registration loop roller is rotating at a constant speed and it does not stop after formation of a paper loop is complete. Therefore, the loop size depends on the time from turning ON to OFF of MC2.



*11 ADU section jam removal mechanism

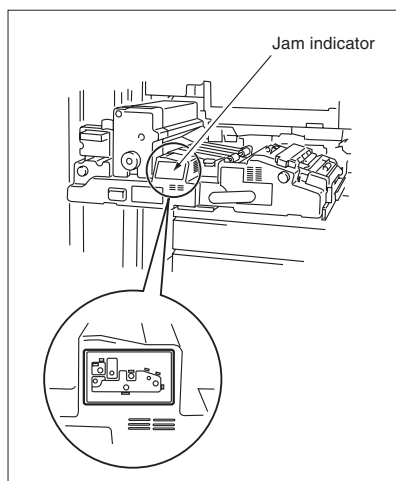
When a jam occurs in the ADU horizontal conveyance section, the jammed paper can be removed by opening the ADU horizontal conveyance unit jam access guide A. The paper jammed at the ADU exit can be removed by opening the ADU exit section jam access guide B.



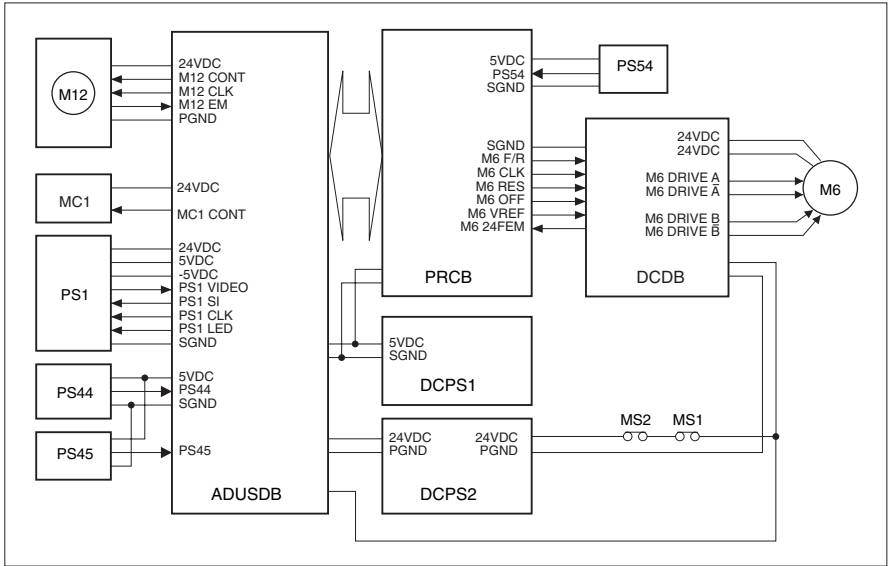
*12 ADU jam indication

The ADU has a jam indicator that indicates the location of the jam (ADU, second paper feed unit, conveyance unit, or fixing unit). All units other than the fixing unit are powered even after the ADU is drawn out of the main unit, allowing the ADU to indicate the jam location.

⚠ Warning: The interlock that is turned OFF when the front right or left door is opened/closed, should never be turned ON forcibly with the ADU drawn out.



[3] Loop/Second Paper Feed Control



The paper fed from one of trays 1-3 is fed to the second paper feed unit. The second paper feed takes place as the result of the transmission of the drive force from M12 (registration) to the second paper feed roller via MC1 (registration MC). The second paper feed unit is preceded by the loop roller, and this conveyance unit is also used for the paper fed from the ADU or LCT excluding the paper from the bypass tray. The loop roller is driven by M6 (loop roller).

The above parts are controlled by the PRCB (printer control board) via the DCDB (DC drive board) and ADUSDB (ADU stand drive board).

Related signals are PS44 (registration), PS45 (leading edge detection), and PS54 (loop detection). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motors, stopping M6 and M12.

1. Operation

a. Loop control

The paper fed from each tray is fed to the second paper feed roller by the loop roller. When PS44

is turned ON, the paper is decelerated and stopped temporarily to form a loop. After a lapse of specified time, MC1 is turned ON to transmit the drive force of M12 to the second paper feed roller, thus feeding the paper to the transfer/separation section. When the second paper feed starts, the loop roller feeds the paper at the low linear velocity which is the same as that of the second paper feed roller.

b. Second paper feed control

After formation of a loop is completed, MC1 is turned ON to transmit the drive force of M12 to the second paper feed roller, starting the second paper feed.

c. Mis-centering detection control

Mis-centering of the paper fed from each tray is detected by PS1 (paper mis-centering) and it is corrected at the time of image write.

A contact sensor is used as PS1. The paper edge position is detected by mis-centering sensors. Based on the edge position information, the image write position is shifted to correct mis-centering. PS1 operates in the specified interval after PS45 is turned ON.

2. Signals

a. PRCB input signals

- (1) PS54 (PS54 to PRCB)
Loop formation reference timing detection signal.
The leading edge or trailing edge of paper is detected.
[L]: Paper exists.
[H]: Paper does not exist.

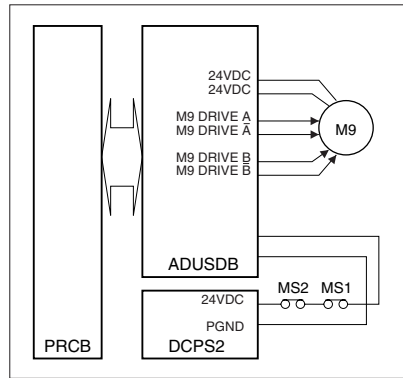
b. ADUSDB input signal

- (1) M12 EM (M12 to ADUSDB to PRCB)
M12 fault detection signal.
[L]: Normal
[H]: Abnormal
- (2) PS1 VIDEO (PS1 to ADUSDB to PRCB)
PS1 sensor output signal.
- (3) PS44 VIDEO (PS44 to ADUSDB to PRCB)
Second paper feed reference timing detection signal.
[L]: Paper exists.
[H]: Paper does not exist.
- (4) PS45 VIDEO (PS45 to ADUSDB to PRCB)
Paper leading edge detection signal (reference timing for various control operations)
[L]: Paper exists.
[H]: Paper does not exist.

c. ADUSDB output signals

- (1) M12 CONT (ADUSDB to M12)
M12 drive control signal.
[L]: M12 ON
[H]: M12 OFF
- (2) M12 CLK (ADUSDB to M12)
M12 clock signal
- (3) MC1 CONT (ADUSDB to MC1)
MC1 drive control signal.
[L]: MC1 ON
[H]: MC1 OFF
- (4) PS1 SI (ADUSDB to PS1)
PS1 start pulse
- (5) PS1 CLK (ADUSDB to PS1)
PS1 drive clock signal
- (6) PS1 LED (ADUSDB to PS1)
PS1 LED control signal

[4] Paper Conveyance Control



Conveyance of the paper fed from the second paper feed unit is controlled by the pre-transfer roller driven by M9 (transfer). M9 is controlled by the PRCB (printer control board) via the ADUSDB (ADU stand drive board). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motor, stopping M9.

1. Operation

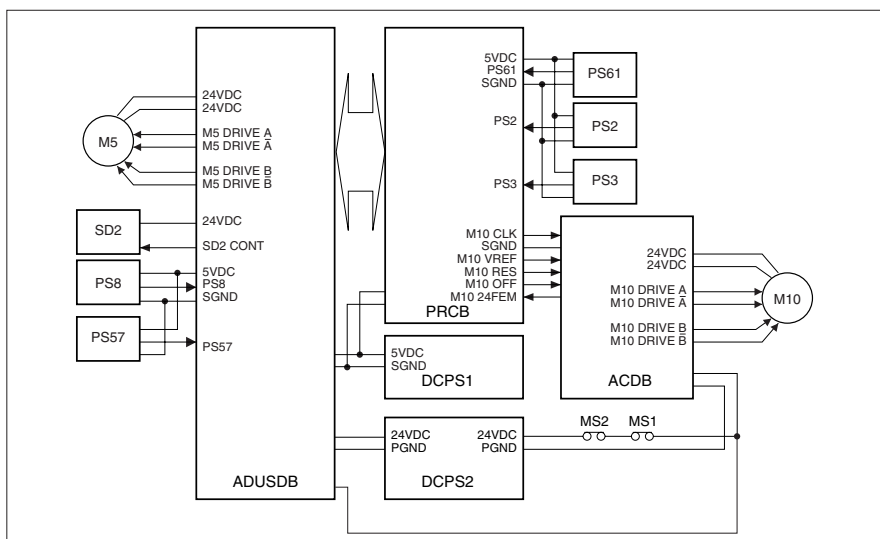
A 24V stepping motor is used for M9 in order to drive constantly at low speed.

2. Signals

a. Output signals

- (1) M9 DRIVE A, \bar{A} (M9 to ADUSDB)
M9 A-phase drive control pulse signal
- (2) M9 DRIVE B, \bar{B} (M9 to ADUSDB)
M9 B-phase drive control pulse signal

[5] Paper Reverse and Exit Control



The paper fed from the fixing unit is fed, through the paper reverse and conveyance section, to the ejection tray or ADU. The paper gate is driven by SD2 (paper reverse gate). The paper reverse and exit roller is driven by M5 (paper reverse/exit), and the paper exit roller is driven by M10 (paper exit motor).

M10, M5, and SD2 are controlled by the PRCB (control board) via the ADUSDB (ADU drive board).

Related signals are PS58 (reverse transfer), PS57 (reversal detection), PS61 (paper exit), PS2 (fixing unit exit), and PS3 (fixing unit jam detection). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motors, stopping M5 and M10.

1. Operation

a. Paper reverse gate control

The paper reverse gate is driven by SD2. Normally, the paper reverse gate is opened and guides the paper to the reversal unit. SD2 is turned ON to close the gate when ejecting paper straight.

b. M5 (paper reverse and exit) control

(1) Straight paper exit

When paper ejected straight, the paper reverse gate is closed with SD2 turned ON. Accordingly, paper is ejected straight at low speed rotation.

(2) Paper reverse and exit

1) The paper fed to the paper reverse and exit section is fed to the conveyance path in the paper reverse and exit section through the paper reverse gate opened by the OFF operation of SD2.

2) Linear velocity is changed to high speed when the trailing edge of the paper conveyed at low speed by M5 passes the nip of the fixing roller. Then M5 rotates backward at high speed and the paper is conveyed to the paper exit roller after a specified interval since the trailing edge of the paper turns OFF PS57.

(3) ADU conveyance

1) When SD2 is turned OFF, the paper reverse gate opens to feed paper to the conveyance path in the paper reverse and exit section just like paper reverse and exit operation.

2) Linear velocity is changed to high speed and conveys the paper when the trailing edge of the paper conveyed at low speed passes the fixing nip.

3) Then rotates at high speed by M7 and draws the paper into the ADU reversal unit.

c. M10 (paper exit) control

M10 rotates at low speed after a specified interval since the start button is turned ON. During reversal paper exit, the paper reversed by M5 is ejected. During this time, linear velocity is reduced from high speed to low speed when PS57 is turned OFF by the trailing edge of the paper. (Model equipped with FNS keeps ejecting at high speed.) Paper is conveyed at low speed during straight paper exit.

2. Signals

a. PRCB input signals

- (1) PS2 (PS2 to PRCB)
Detection of paper passage at fixing unit exit
[L]: Paper exists.
[H]: Paper does not exist.
- (2) PS3 (PS3 to PRCB)
Detection of jam in fixing unit
[L]: Paper exists. (Jam is detected.)
[H]: Paper does not exist. (Jam is not detected.)
- (3) PS61 (PS61 to PRCB)
Detection of paper passage in ejection section
[L]: Paper exists.
[H]: Paper does not exist.

- (4) M10 24FEM (M10 to PRCB)
Signal indicating whether M10's 24 V fuse is blown.
[L]: Not detected
[H]: Detected

b. PRCB output signals

- (1) M10 CLK (PRCB to M10)
M10 clock signal
M10 stops when clock stops (L).
- (2) M10 REF (PRCB to M10)
M10 current indication signal
- (3) M10 OF (PRCB to M10)
M10 stop signal
[L]: M10 stop
[H]: M10 stand by

c. ACDB output signals

- (1) M10 DRIVE A, \bar{A} (ACDB to M10)
M10 A-phase drive control clock signal.
- (2) M10 DRIVE B, \bar{B} (ACDB to M10)
M10 B-phase drive control clock signal.

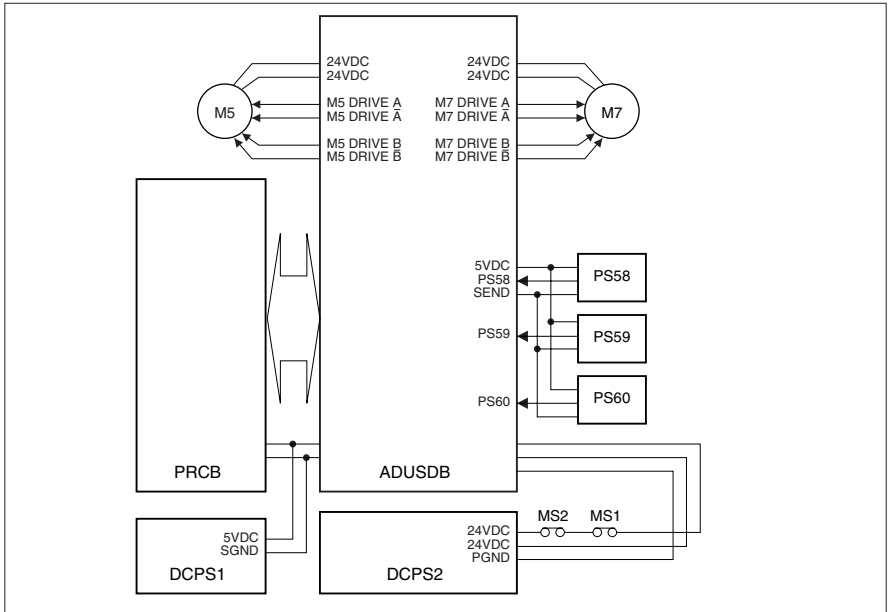
d. ADUSDB input signals

- (1) PS8 (PS8 to ADUSDB to PRCB)
Detection of paper passage in reversal/ejection section
[L]: Paper exists.
[H]: Paper does not exist.
- (2) PS57 (PS57 to ADUSDB to PRCB)
Reverse and eject control reference timing signal.
The leading edge or trailing edge of paper is detected.
[L]: Paper exists.
[H]: Paper does not exist.

e. ADUSDB output signals

- (1) M5 DRIVE A, \bar{A} (ADUSDB to M5)
M5 A-phase drive control clock signal
- (2) M5 DRIVE B, \bar{B} (ADUSDB to M5)
M5 B-phase drive control clock signal

[6] ADU Paper Feed/Reversal Control



The paper fed from the paper reverse and eject section is fed to the ADU by M5 (paper reverse/exit). In the ADU, paper is reversed by transmitting the drive force of M7 (ADU reverse) to the paper reverse roller. M5 and M7 are controlled by the PRCB (printer control board) via the ADUSDB (ADU stand drive board). Related signals are PS58 (ADU paper reverse), PS59 (ADU deceleration), and PS60 (ADU pre-registration). When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motors, stopping M5 and M7.

1. Operation

a. ADU paper feed control

The paper fed from the paper reverse and exit section by the drive force of M5 is then fed to the ADU paper reversal section.

b. ADU paper reversal control

When paper is fed to the ADU reversal section, M7 turns ON to feed paper continuously. When the trailing edge of paper passes through PS58, M7 starts rotating in the opposite direction, thus feeding paper to the ADU paper conveyance unit.

2. Signals

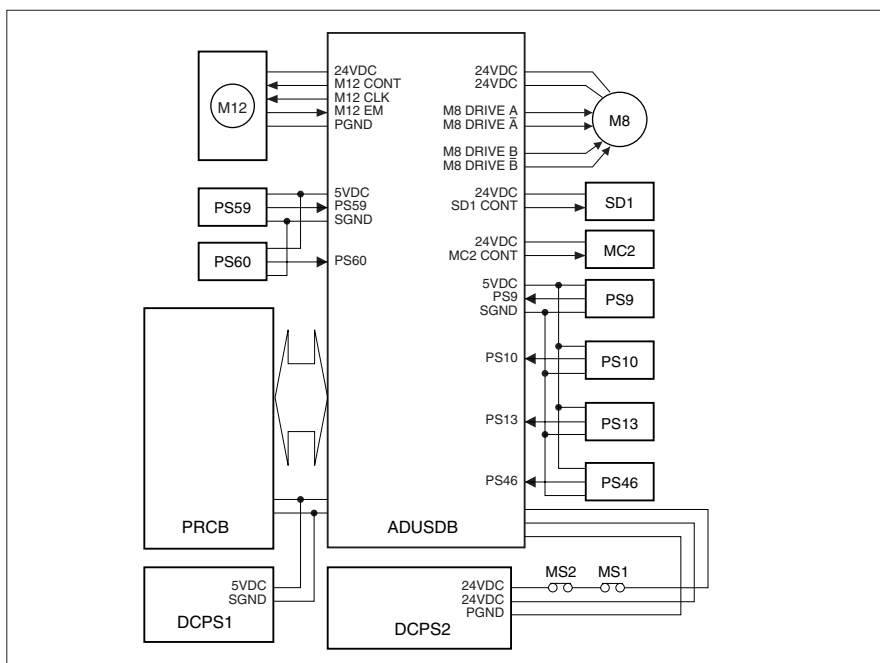
a. ADUSDB input signals

- (1) PS58 (PS58 to ADUSDB to PRCB)
Detection of paper passage in ADU paper reversal section.
M7 is rotated in the opposite direction or turned OFF with reference to this signal. The leading edge or trailing edge of paper is detected.
[L]: Paper exists.
[H]: Paper does not exist.
- (2) PS59 (PS59 to ADUSDB to PRCB)
Detection of reference timing for conveyance speed change
The ADU paper conveyance speed change timing is detected by detecting passage of paper.
[L]: Paper exists.
[H]: Paper does not exist.
- (3) PS60 (PS60 to ADUSDB to PRCB)
Detection of loop timing as well as timing of paper conveyance to second paper feed section.
The leading edge or trailing edge of paper is detected by detecting passage of paper.
[L]: Paper exists.
[H]: Paper does not exist.

b. ADUSDB output signals

- (1) M7 DRIVE A, \bar{A} (ADUSDB to M7)
M7 A-phase drive control pulse signal
- (2) M7 DRIVE B, \bar{B} (ADUSDB to M7)
M7 B-phase drive control pulse signal

[7] ADU Paper Conveyance/Feed Control



The paper fed from the ADU paper reversal section is fed to the paper conveyance rollers by transmitting the drive force of M8 (ADU conveyance) to the paper conveyance rollers. Paper is then fed to the second paper feed section by the drive force of M12 (registration).

Related signals are PS9 (ADU paper conveyance), PS10 (ADU handle release), PS13 (ADU no paper), PS46 (ADU exit), PS59 (ADU deceleration), and PS60 (ADU pre-registration). SD1 (ADU lock) is provided to lock the handle of the ADU.

When the front right or left door of this machine opens or closes, MS1 (interlock 1) or MS2 (interlock 2) operates to interrupt the DC power supply to the motors, stopping M8 and M12.

1. Operation

a. ADU conveyance control

Paper is fed at the high linear velocity until PS59 is turned ON at detection of the paper edge.

b. ADU feed control

When the leading edge of the paper conveyed at high speed by ADU conveyance turns PS59 ON, the M8 linear velocity is reduced to low speed and the paper is conveyed at low speed by M12 after a specified interval. Then when the leading edge of the paper turns PS60 ON, MC1 is turned OFF when MC2 (ADU pre-registration) is turned ON once more, and conveys at low speed after loop forming time has elapsed.

c. M8 (ADU conveyance) control

- (1) On timing
When M8 is turned on at start of copying
- (2) OFF timing
When PS58 is turned OFF at passage of the last paper

d. ADU lock control

The ADU handle is locked by SD1. PS10 detects the handle position to determine whether the handle is locked or released.

2. Signals**a. ADUSDB input signals**

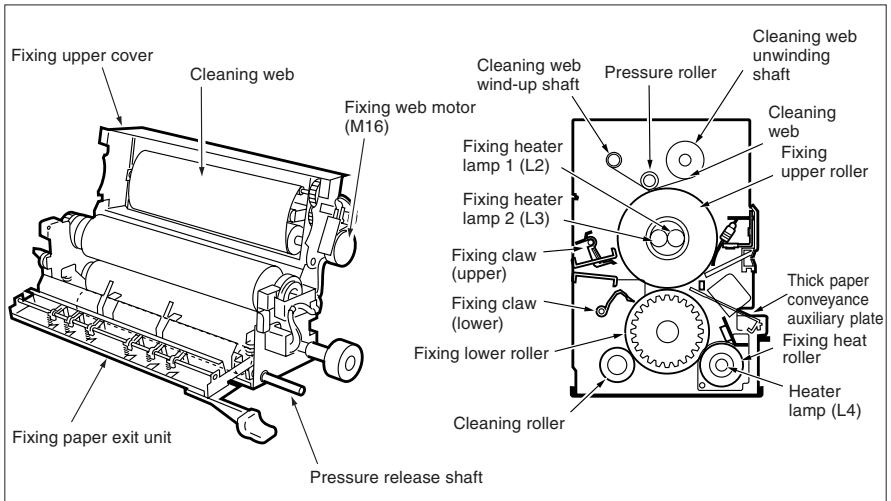
- (1) PS9 (PS9 to ADUSDB to PRCB)
Detection of paper passage in ADU section.
[L]: Paper exists.
[H]: Paper does not exist.
- (2) PS10 (PS10 to ADUSDB to PRCB)
Detection of ADU handle position
[H]: Handle is released.
- (3) PS13 (PS13 to ADUSDB to PRCB)
No paper detection
[L]: Paper exists.
[H]: Paper does not exist.
- (4) PS46 (PS46 to ADUSDB to PRCB)
Detection of paper passage at ADU exit
[L]: Paper exists.
[H]: Paper does not exist.

b. ADUSDB input signals

- (1) M8 DRIVE A,A (ADUSDB to M8)
M8 A-phase drive control clock signal
- (2) M8 DRIVE B,B (ADUSDB to M8)
M8 B-phase drive control clock signal
- (3) MC2 CONT (ADUSDB to MC2)
MC2 drive control signal
[L]: MC2 ON
[H]: MC2 OFF

FIXING UNIT

[1] Composition



[2] Mechanisms

| | Mechanism | Method |
|----|----------------------------------|--|
| | Fixing | Pressure + heat roller |
| *1 | Heat source | Heater lamp (fixing upper roller (two lamps), Fixing heat roller (one lamp)) |
| *2 | Cleaning | Upper roller: Cleaning web (silicon oil) Lower roller : Cleaning roller |
| | Upper roller | Aluminum + PFA tube |
| | Lower roller | Silicon rubber + PFA tube |
| *3 | Fixing heat roller | Aluminum + PTFE coating |
| | Separation | Separation claws (6 upper and 2 lower claws) |
| | Temperature detection | Upper roller: - Noncontact type thermistor (for control) TH1 - Contact type thermistor (for fault detection) TH2 Fixing heat roller: - Noncontact type thermistor (for control) TH3 - Contact type thermistor (for fault detection) TH4 |
| | Overheating prevention | Noncontact type thermostat (Upper roller (one), fixing heat roller (one)) |
| | Neutralizing | Fixing roller (pressure) release brush |
| *4 | Fixing roller (pressure) release | Pressure release cam, spring |
| *5 | Jam detection | Actuator + Photosensor |
| *6 | Thick paper conveyance | Thick paper conveyance auxiliary plate (movable) + Fixing guide solenoid (SD3) |

*1 Fixing lamps

Two halogen lamps are used for the fixing upper roller and one halogen lamp is used for the fixing heat roller. These halogen lamps are intended to reduce the warm-up time.

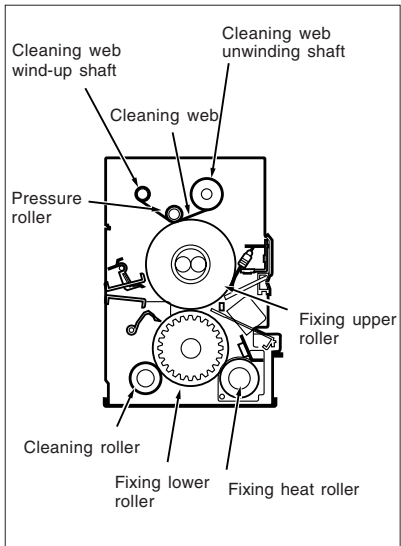
*2 Cleaning

Fixing upper roller:

Cleaning web is used to clean the fixing upper roller. The cleaning web wind-up shaft is driven intermittently by the web drive motor (M16) via gears to supply cleaning web from the web roll. Since the number of turns of the motor is controlled according to the copy count, the amount of cleaning web supplied is approx. 0.022 to 0.058 mm/copy. A cleaning web which contains silicon oil is pressed against the fixing upper roller by the pressure roller.

Fixing lower roller:

Fixing lower roller, fixing heat roller and cleaning roller touch each other when they rotate. The cleaning roller is used to clean dirt off the fixing lower roller.



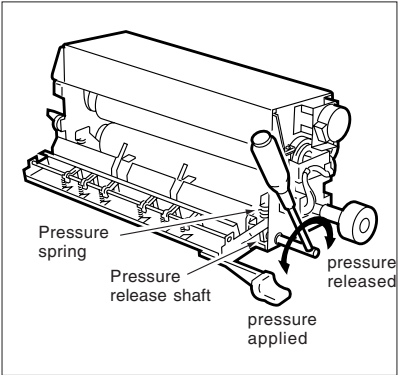
*3 Fixing heat roller

The fixing heat roller incorporating one halogen lamp rotates keeping contact with the fixing lower roller. Thus, the fixing lower roller is heated. The fault detection mechanism is similar to that for the fixing upper roller. It is used to detect extremely high or lower temperature and a sensor fault.

*4 Fixing roller pressure/release

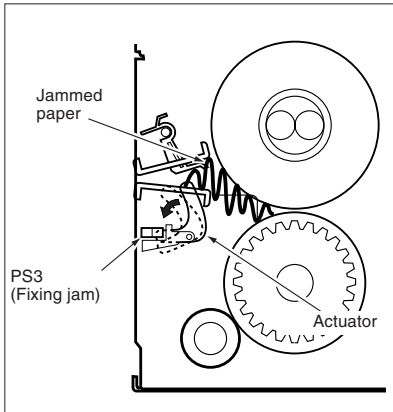
Pressure on the fixing lower roller to contact to the upper roller is applied or released by rotating the pressure release levers (two) provided at the front and back of the fixing unit.

Caution: Be sure to perform pressure release with the fixing upper cover closed.



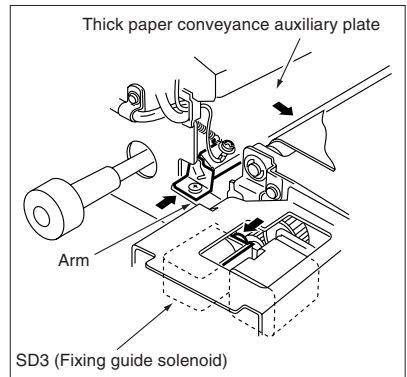
*5 Jam detection

When a jam occurs in the paper exit section in the fixing unit, the jammed paper presses down the actuator, causing the fixing jam sensor (PS3) to detect a jam via the jam detection plate and actuator operation.

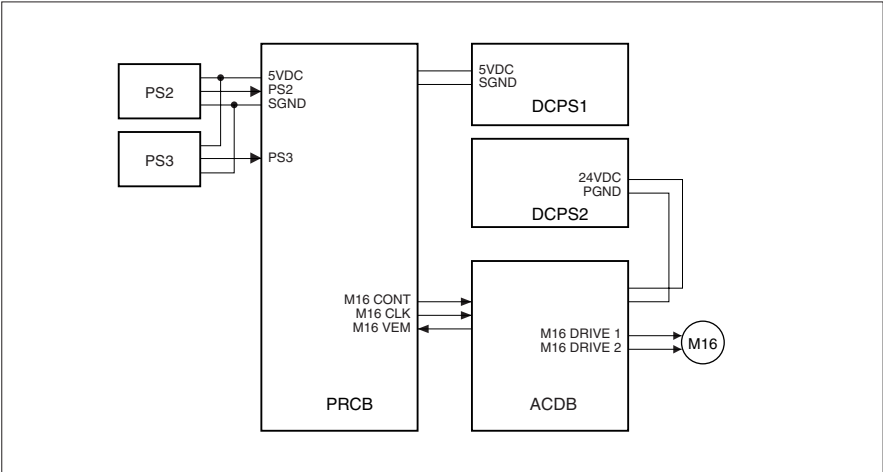


*6 Thick paper conveyance

When a thick paper is fed, the fixing guide solenoid (SD3) installed on the ADU side is turned ON and the thick paper conveyance auxiliary plate installed at the inlet of the fixing unit is pressed down via the arm, thus improving transportability of thick paper.



[3] M16 (Web Drive)



M16 (web drive) is controlled by the PRCB (printer control board) via the ACDB (AC drive board). Related signals are PS2 (fixing exit) and PS3 (fixing jam).

1. Operation

When PS2 is turned ON by passage of paper, the PRCB controls M16 according to the value of the cleaning web counter. The cleaning web counter value is incremented together with the total counter in the ejection section of the main body. The relationship between the cleaning web counter values and M16 control is as follows:

| Cleaning web counter value | M16 control |
|----------------------------|--------------------------------|
| 1 to 10,000 | Driven for 600 ms per copy |
| 10,001 to 20,000 | Driven for 500 ms per copy |
| 20,001 to 40,000 | Driven for 400 ms per copy |
| 40,001 to 50,000 | Driven for 700 ms per 2 copies |
| 50,001 to 200,000 | Driven for 600 ms per 2 copies |
| 200,001 to 300,000 | Driven for 500 ms per 2 copies |
| 300,001 or more | Driven for 400 ms per 2 copies |

2. Signals

a. PRCB input signals

- (1) PS2 (PS2 to PRCB)
Detection of passage of paper at fixing unit exit
[L]: Paper exists.
[H]: Paper does not exist.
- (2) PS3 (PS3 to PRCB)
Fixing jam detection signal
[L]: Paper exists. (Jam is detected.)
[H]: Paper does not exist. (Jam is not detected.)
- (3) M16 VEM (ACDB to PRCB)
M16's 24V power detection signal
[H]: 24V power is not supplied.

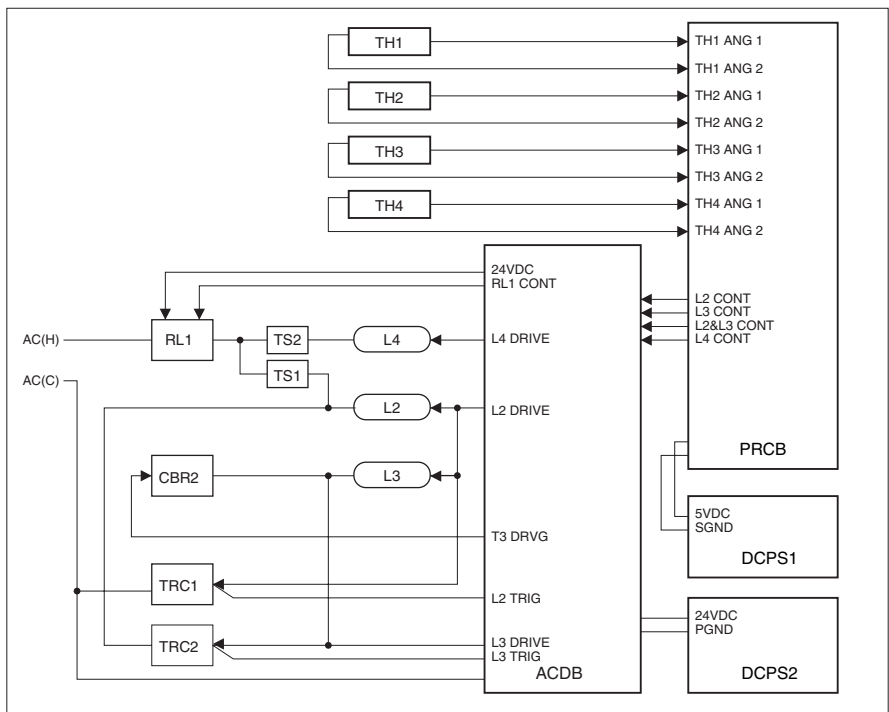
b. PRCB output signals

- (1) M16 CONT (PRCB to ACDB)
M16 drive control signal.
[L]: M16 standby
[H]: M16 stop
- (2) M16 CLK (PRCB to ACDB)
M16 clock signal

c. ACDB output signal

- (1) M16 DRIVE1, 2 (ACDB to M16)
M16 drive control signal

[4] Fixing Temperature Control



The fixing upper roller is heated by L2 (fixing upper roller heater lamp 1) and L3 (fixing upper roller heater lamp 2) and the fixing lower roller is heated by L4 (fixing heat roller heater lamp 3) via the fixing heat roller. The PRCB (printer control board) detects the temperature of the fixing rollers using TH1 (fixing unit temperature sensor 1) and controls L2, L3, L4 via the ACDB (AC drive board).

1. Operation

a. Temperature control

The PRCB turns ON the fixing heater lamp circuit in ACDB as soon as the main switch is turned ON, causing L2, L3, and L4 to go ON until the fixing upper roller reaches the specified temperature. Series/parallel switching control is performed over L2 and L3 to prevent flicker

(fluorescent lamp etc.). Immediately after L2 and L3 are turned ON, they are connected in series to suppress rush current. Then they are connected in parallel. TRC1 (triac 1), TRC2 (triac 2) and TRC3 (triac 3) are used for this series/parallel switching control. The series/parallel switching circuit is provided with CBR2 (circuit breaker 2) to prevent short current from flowing when a operation error or fault occurs.

Set temperature: 200°C (392°F)

Warm-up time: 5 minutes or less (at room temperature 20°C (68°F))

b. Protection against abnormality

Thermostats are used to prevent the temperature of the fixing rollers from rising abnormally. TS1 (thermostat 1 (upper)) is used for the fixing upper roller and TS2 (thermostat 2 (lower)) is used for the fixing heat roller respectively. Noncontact type thermostats are used, so they do not touch each rollers.

The operating temperatures of the above thermostats are as follows:

TS1: Opens at about 180°C (356°F)

TS2: Opens at about 181°C (358°F)

2. Signals

a. PRCB input signals

- (1) TH1 ANG1,2 (TH1 to PRCB)
Detection of fixing upper roller
This signal is used to control the temperature of the fixing upper roller and to detect abnormality.
- (2) TH2 ANG1,2 (TH2 to PRCB)
Detection of fixing upper roller temperature
This signal is used to detect the abnormal temperature of the upper roller and to detect a low temperature alarm 180°C (356°F).
- (3) TH3 ANG1,2 (TH3 to PRCB)
Detection of fixing heat roller temperature
This signal is used to control the temperature of the fixing lower roller and to detect abnormality.
- (4) TH4 ANG1,2 (TH4 to PRCB)
Detection of fixing heat roller temperature
This signal is used to detect the abnormal temperature of the fixing lower roller and to detect abnormality.

b. PRCB Output signals

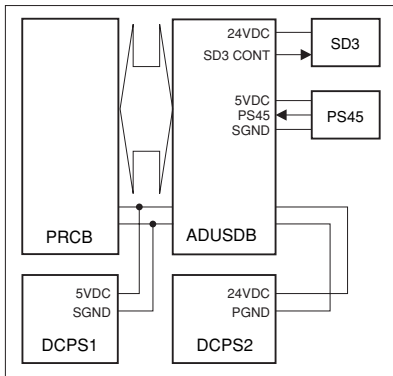
- (1) L2 CONT (PRCB to ACDB)
L2 drive control signal
[L]: L2 ON
[H]: L2 OFF
- (2) L3 CONT (PRCB to ACDB)
L3 drive control signal
[L]: L3 ON
[H]: L3 OFF
- (3) L2&L3 CONT (PRCB to ACDB)
L2&L3 drive control signal
[L]: L2 & L3 ON
[H]: L2 & L3 OFF

- (4) L4 CONT (PRCB to ACDB)
L4 drive control signal
[L]: L4 ON
[H]: L4 OFF

c. ACDB output signals

- (1) RL1 CONT (ACDB to RL1)
RL1 drive control signal
[L]: RL1 ON
[H]: RL1 OFF
- (2) L2 DRIVE (ACDB to L2)
L2 drive control signal
[L]: RL2 ON
[H]: RL2 OFF
- (3) L3 DRIVE (ACDB to L3)
L3 drive control signal
[L]: RL3 ON
[H]: RL3 OFF
- (4) L4 DRIVE (ACDB to L4)
L4 drive control signal
[L]: RL4 ON
[H]: RL4 OFF
- (5) L2 TRIG (ACDB to TRC1)
TRC1 trigger signal
- (6) L3 TRIG (ACDB to TRC2)
TRC2 trigger signal
- (7) T3 DRVG (ACDB to TRC2)
CBR2 connection line between triac switches

[5] SD3 (fixing guide) Control



SD3 (fixing guide) is driven by ADUSDB (ADU stand drive board) and controled by serial data sent from PRCB (printer control board).

1. Operation

When the thick paper mode is selected on the operation panel, SD3 turns ON after the specified time from PS45 (leading edge detection) detected the paper leading edge and lowers the thick paper conveyance auxiliary plate, widening the paper feed space. As a result, feeding a thick paper to the fixing unit becomes smoother.

2. Signal

a. Output signal

- (1) SD3 CONT (ADUSDB to SD3)

SD3 drive control signal

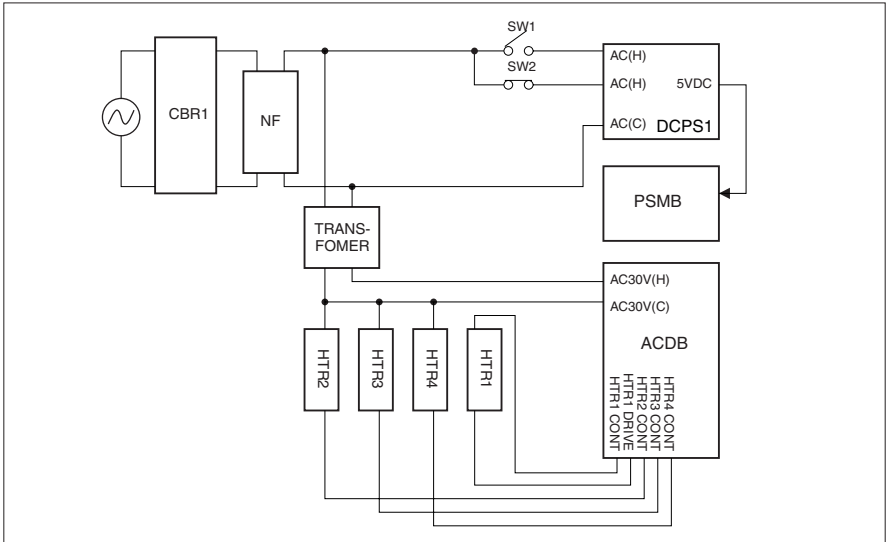
[L]: SD3 ON

[H]: SD3 OFF

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OTHER KINDS OF CONTROL

[1] Parts Energized when the Main Switch is OFF



1. Operation

If the power cord is plugged in the wall outlet, the following parts are energized regardless of whether SW1 (main) is ON or OFF:

a. CBR1 (circuit breaker 1)

If an excessive current flows due to a short in an internal part or other factors, this breaker turns OFF to cut off the power to the machine.

b. NF (noise filter)

The noise filter is used to reduce the noise arriving through the power line.

c. DCPS1 (DC power supply unit 1)

Even when SW1 is OFF, part of the 5 V output is supplied to PSMB (power supply management board). This power supply stops when SW2 (reset switch) is turned OFF.

d. Internal heaters

Power is supplied to the tray heaters HTR2 ~ HTR4 regardless of whether the SW1 and 2 are ON or OFF. When SW1 is turned ON, power supply to HTR2 ~ HTR4 are stopped and HTR1 (drum heater) is energized.

When SW 1 is turned on, HTR2 ~ HTR4 are turned ON/OFF in order to maintain the drum

surface temperature at 30°C (86°F).

HTR2 and HTR3 are turned ON only when HTR1 is OFF.

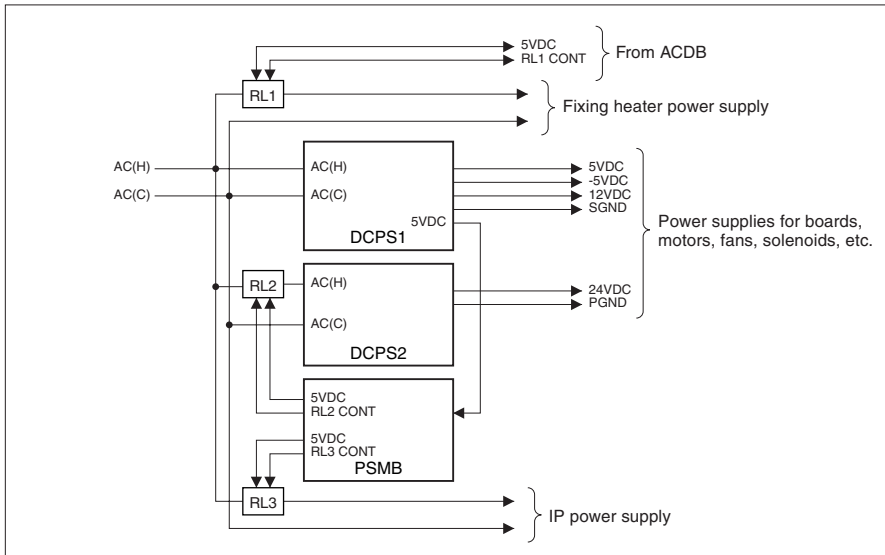
e. PSMB (power supply management board)

5V DC is supplied from DCPS1 to this board except when SW2 (reset) is OFF.

2. Signals

a. ACDB output signals

- (1) HTR1 CONT
Drum heater ON/OFF control signal
- (2) HTR1 DRIVE
Power (24V AC) supply line for drum heater
- (3) HTR2 CONT
Tray 1 humidifying heater ON/OFF control signal
- (4) HTR3 CONT
Tray 2 humidifying heater ON/OFF control signal
- (5) HTR4 CONT
Tray 3 humidifying heater ON/OFF control signal

[2] Parts that Operate when the Main Switch is Turned ON**1. Operation****a. Power supply**

When SW1 (main) is turned ON, AC power is supplied to the DCPS1 (DC power supply unit 1). As a result, the PSMB (power supply management board) turns ON RL2 (AC input relay for DCPS2), supplying AC power to DCPS2 (DC power supply unit 2). DCPS1 supplies 5V DC, -5V DC, and 12V DC which are used in the machine. DCPS2 supplies 24V DC. DCPS1 and DCPS2 supply power to the PRCB (printer control board) and other boards used in the machine, starting initial operations and control inside the machine.

2. Signals**a. RL1 input signal**

- (1) RL1 CONT (ACDB to RL1)

RL1 drive control signal.

This signal controls ON/OFF operations of L2, L3, and L4 drive power relay.

[L]: RL1 ON

[H]: RL1 OFF

b. RL2 input signal

- RL2 CONT (PSWB to RL2)

RL2 drive control signal.

This signal controls ON/OFF operations of the relay for AC power supply to DCPS2.

[L]: RL2 ON

[H]: RL2 OFF

c. RL3 input signal

- (1) RL3 CONT (PSMB to RL3)

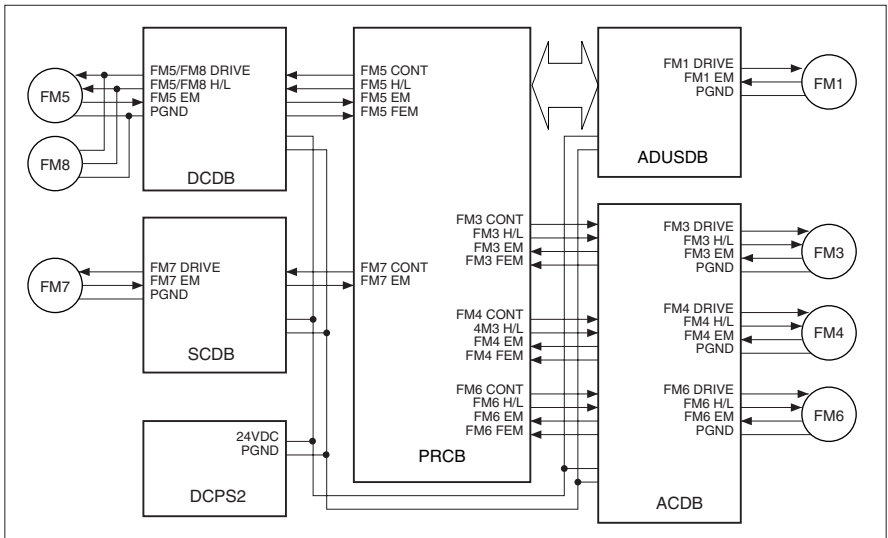
RL3 drive control signal.

This signal controls ON/OFF operations of the relay for AC power supply to IP.

[L]: RL3 ON

[H]: RL3 OFF

[3] Cooling Fan Control



FM1 (paper exit) is driven by ADUSDB (ADU stand drive board). FM3 (main body cooling 1), FM4 (main body cooling 2), and FM6 (main body cooling 3) are driven by the ACDB (AC drive board). FM5 (write section cooling 1) and FM8 (write section cooling 2) are driven by the DCDB (DC drive board), and FM7 (scanner cooling) is driven by the SCDB (scanner drive board). All the above parts are controlled by the PRCB (printer control board).

1. Operation

A 24V DC motor is used for each cooling fan.

a. FM1

- (1) ON timing
Held ON during copy operation
- (2) OFF timing
Held OFF during idling

b. FM3, FM4, and FM6

- (1) ON timing
 - Turned ON after completion of the first warm-up after power-ON
 - During warm-up, turned ON when the drum starts rotating.

- During idling, rotates at high speed when the drum temperature exceeds specified temperature.
- Always rotates at high speed during copying, switching to low speed rotation at specified time after copy completes.

(2) OFF timing

- During warm-up, turned OFF when the drum stops rotating.
- After completion of warm-up, held ON until the power is turned OFF.

c. FM5, FM8

(1) ON timing

Turned ON after power-on.
Always rotates at low speed during idling. During copying, rotates at high speed when the drum temperature is higher than specified temperature while HTR1 (drum heater) is OFF, otherwise low speed rotation.

(2) OFF timing

Not turned OFF until the power is turned OFF.

d. FM7

- (1) ON timing
Turned ON when L1 has been lit for at least 80 seconds.
- (2) OFF timing
Turned OFF when L1 is turned OFF.

2. Signals**a. PRCB input signals**

- (1) FM3 EM (FM3 to ACDB to PRCB)
FM3 fault detection signal.
[H]: Fault is detected.
- (2) FM3 FEM (ACDB to PRCB)
FM3's 24V DC power detection signal
[H]: 24 V power OFF
- (3) FM4 EM (FM4 to ACDB to PRCB)
FM4 fault detection signal.
[H]: Fault is detected.
- (4) FM4 FEM (ACDB to PRCB)
FM4's 24V DC power detection signal
[H]: 24 V power OFF
- (5) FM5 EM (FM5 to DCDB to PRCB)
FM5 fault detection signal.
[H]: Fault is detected.
- (6) FM5 FEM (DCDB to PRCB)
FM5's 24V DC power detection signal
[H]: 24 V power OFF
- (7) FM6 EM (FM6 to ACDB to PRCB)
FM6 fault detection signal.
[H]: Fault is detected.
- (8) FM6 FEM (ACDB to PRCB)
FM6's 24V DC power detection signal
[H]: 24 V power OFF
- (9) FM7 EM (FM7 to OPDB to PRCB)
FM7 fault detection signal.
[H]: Fault is detected.

b. PRCB output signals

- (1) FM3 CONT (PRCB to ACDB)
FM3 ON/OFF control signal.
[L]: FM3 ON
[H]: FM3 OFF
- (2) FM3 H/L (PRCB to ACDB to FM3)
FM3's rotational speed control signal.
[L]: Low speed
[H]: High speed

- (3) FM4 CONT (PRCB to ACDB)
FM4 ON/OFF control signal.
[L]: FM4 ON
[H]: FM4 OFF
- (4) FM4 H/L (PRCB to ACDB to FM4)
FM4's rotational speed control signal.
[L]: Low speed
[H]: High speed
- (5) FM5 CONT (PRCB to DCDB)
FM5 ON/OFF control signal.
[L]: FM5 ON
[H]: FM5 OFF
- (6) FM5 H/L (PRCB to DCDB to FM5)
FM5's rotational speed control signal.
[L]: Low speed
[H]: High speed
- (7) FM6 CONT (PRCB to ACDB)
FM6 ON/OFF control signal.
[L]: FM6 ON
[H]: FM6 OFF
- (8) FM6 H/L (PRCB to ACDB to FM6)
FM6's rotational speed control signal.
[L]: Low speed
[H]: High speed
- (9) FM7 CONT (PRCB to OPDB)
FM7 ON/OFF control signal.
[L]: FM7 ON
[H]: FM7 OFF

c. ADUSDB input signal

- (1) FM1 EM (FM1 to ADUSDB)
FM1 fault detection signal.
[L]: Normal
[H]: Abnormal

d. ADUSDB output signal

- (1) FM1 DRIVE (ADUSDB to FM1)
FM1 ON/OFF control signal.
[L]: FM1 ON
[H]: FM1 OFF

e. ACDB output signals

- (1) FM3 DRIVE (ACDB to FM3)
FM3 ON/OFF control signal.
[L]: FM3 ON
[H]: FM3 OFF
- (2) FM4 DRIVE (ACDB to FM4)
FM4 ON/OFF control signal.
[L]: FM4 ON
[H]: FM4 OFF

- (3) FM6 DRIVE (ACDB to FM6)
FM6 ON/OFF control signal.
[L]: FM6 ON
[H]: FM6 OFF

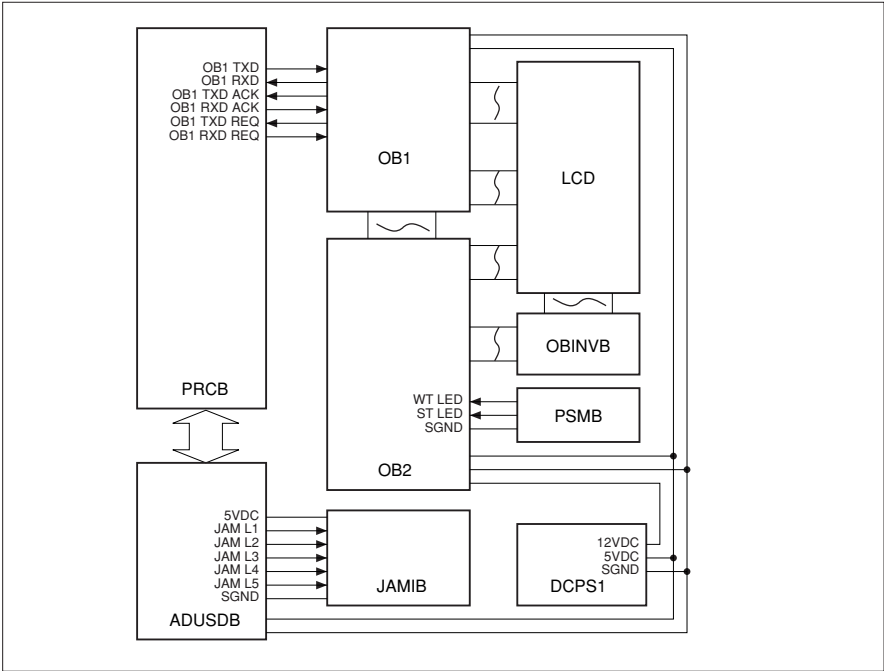
f. DCDB output signal

- (1) FM5 DRIVE (DCDB to FM5)
FM5 ON/OFF control signal.
[L]: FM5 ON
[H]: FM5 OFF

g. SCDB output signal

- (1) FM7 DRIVE (OPDB to FM7)
FM7 ON/OFF control signal.
[L]: FM7 ON
[H]: FM7 OFF

[4] Operation Panel Control



The operation panel consists of OB1 (operation board 1), OB2 (operation board 2), and LCD (indicator board). On the backlight control board is mounted an LCD. The LCD has a backlight which is driven by the OBINVB (OB inverter board) and touch switches which correspond to the display messages. The operation panel is controlled by the OB1 based on the serial data output from the PRCB (printer control board).

1. Operation

a. LED ON operation

The LED on the OB2 are turned ON/OFF by shift register/latch driver. Each IC is turned ON/OFF according to the serial data from the PRCB.

b. LCD control

- (1) LCD display operation
The LCD displays various information according to the 4-bit parallel data from the OB1.
- (2) Backlight ON operation
The LCD has a backlight (cold cathode tube) to facilitate viewing. The backlight is driven by the OBINVB, and controlled by the OB1 via the OB2.

(3) Touch switch control

The LCD has touch switches, enabling you to directly select items displayed on the screen. These touch switches are controlled by the OB1.

2. Signals**a. PRCB input signals**

(1) OB1 RXD (OB1 to PRCB)

Serial data which informs PRCB of the operation state of OB1.

(2) OB1 TXD REQ (OB1 to PRCB)

Signal which indicates that data is being sent from OB1 to PRCB.

[H]: PRCB stops sending the PB1 TXD signal.

(3) OB1 TXD ACK (OB1 to PRCB)

Acknowledgment signal which is returned each time OB1 receives one-byte data from PRCB

b. PRCB output signal

(1) OB1 TXD (PRCB to OB1)

Serial data which informs OB1 of the machine status that is known to PRCB

(2) OB1 TXD REQ (PRCB to OB1)

Signal which indicates that data is being sent from PRCB to OB1.

[H]: OB1 stops sending the OB1 RXD signal.

(3) OB1 TXD ACK (PRCB to OB1)

Acknowledgment signal which is returned each time PRCB receives one-byte data from OB1

c. ADUSDB output signal

(1) JAM1-5 (ADUSDB to JAMIB)

LED ON control signal to JAMIB (jam indicator board).

The LED corresponding to the jam location is turned ON on the JAMIB.

d. OB2 input signal

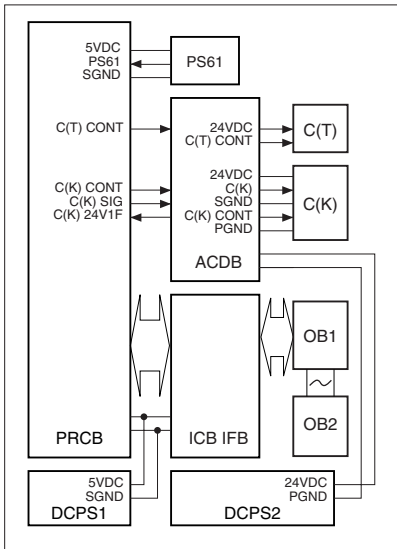
(1) WT LED (PSWB to OB2)

Weekly timer LED ON/OFF control signal.

(2) ST LED (PPSWB to B2)

LCD backlight ON/OFF control signal.

[5] Counter Control



This machine has the following counters:

C (T): Total counter

C (K): Key counter

These counters are controlled by the PRCB (printer control board).

The related signal is PS61 (paper exit).

1. Operation

This machine counts copies using a software counter.

(1) Paper ejection counter

The count increases by 1 each time PS61 which has been ON is turned OFF (two counts in the dual-sided copy mode).

<Operation of each counter>

a. Copy quantity display counter on OB

Displays the count of ejected papers

b. C (K)

This counter counts in sync. with the paper exit counter.

c. C (T)

This counter counts in sync. with the paper exit counter.

2. Signals

a. Input signals

(1) PS61 (PS61 to PRCB)

Signal indicating passage of paper in the paper exit section.

[L]: PS61 is turned ON to indicate that paper has been ejected.

(2) C (K) 24V 1F (ACDB to PRCB)

Signal indicating the state of 24 V power supply to C (K).

[L]: 24V power is not supplied.

b. Output signals

(1) C (T) CONT (PRCB to ACDB to C (T))

C (T) drive control signal.

[L]: C (T) ON

(2) C (K) CONT (PRCB to ACDB to C (K))

C (K) drive control signal.

[L]: C (K) ON

(3) C (K) SIG (PRCB to ACDB)

Key counter signal.

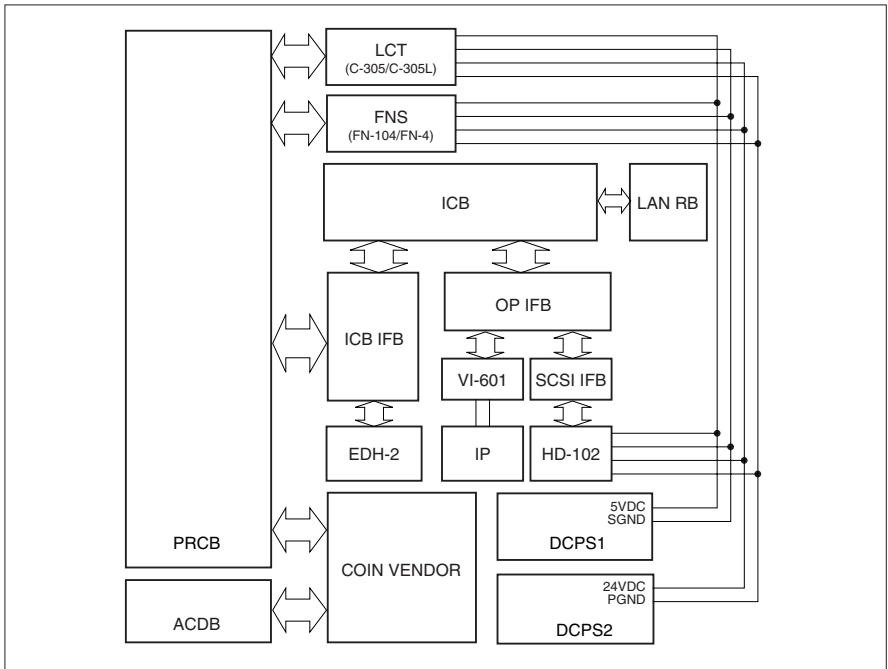
[L]: Signal exists.

c. ACDB output signal

(1) C (K) (ACDB to C (K))

Key counter signal

[L]: Signal exists.

[6] Option Control

Options such as LCT and FNS are controlled by the PRCB (printer control board).

1. Operation

The FNS incorporates a CB (control board) which exchanges only control data with the PRCB of the main unit. The LCT and FNS are powered by the DCPS1 (DC power supply unit 1).

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DISASSEMBLY/ASSEMBLY

This section explains how to disassemble and reassemble the machine. When disassembling and reassembling the machine, follow the precautions given below.

1. Be sure the power cord has been unplugged from the wall outlet.
2. The disassembled parts must be reassembled following the disassembly procedure in reverse unless otherwise specified.
3. Care should be taken not to lose small parts. Care should also be taken not to install small parts in wrong places.
4. Do not operate the machine before installing all the disassembled parts completely.
5. Removal of some screws is prohibited in this section. Never loosen them.

EXTERNAL SECTION

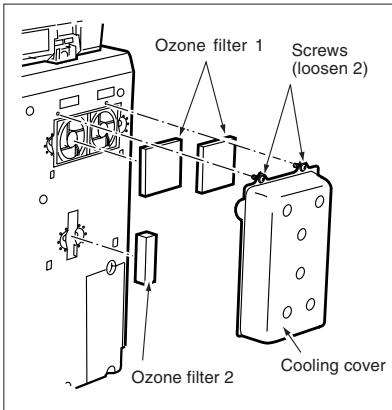
[1] Replacing Ozone Filters

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution: When replacing ozone filters, insert them in the openings in the main body as far as they will go.

a. Procedure

- (1) Loosen the two screws to remove the cooling fan cover.
- (2) Replace two ozone filters 1 (upper/2) and one ozone filter 2 (lower/1).



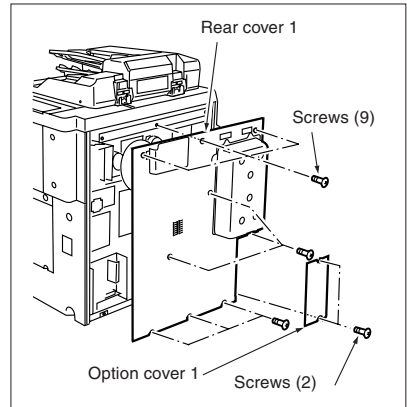
- (3) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the External Cover

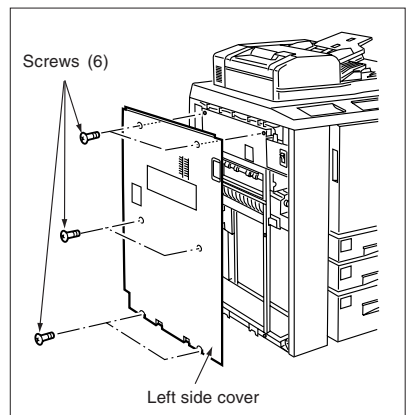
⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

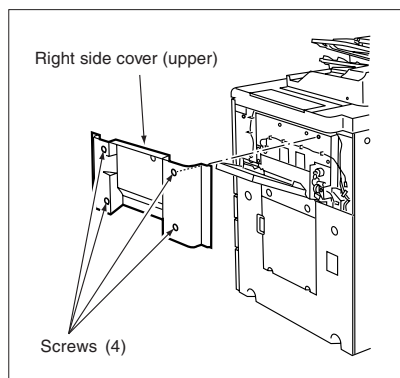
- (1) Remove the two screws to detach the option cover.
- (2) Remove the nine screws to detach the rear cover.



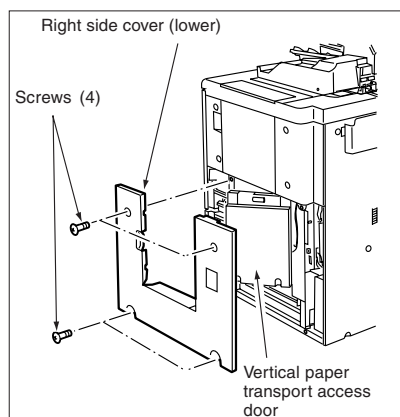
- (3) Remove the six screws to detach the left side cover.



- (4) Remove the four screws to detach the right side cover (upper).



- (5) Open the vertical paper transport jam access door.
 (6) Remove the four screws to detach the right side cover (lower).



- (7) Reinstall the above parts following the removal steps in reverse.

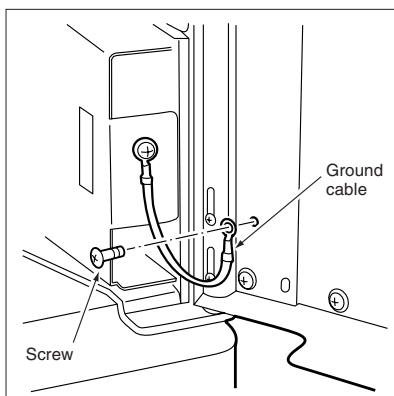
Caution: Covers can be detached separately.

[3] Removing and Reinstalling the Front Right Door

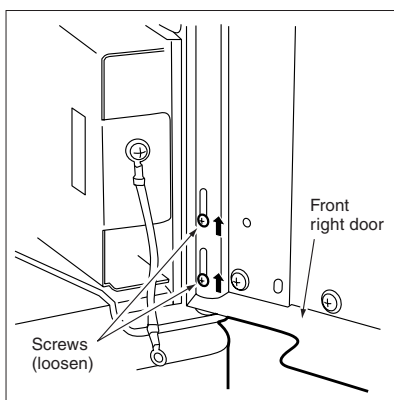
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the front right door.
 (2) Remove the screw to disconnect the ground cable.



- (3) Loosen the two screws securing the hinge.
 (4) While holding the top of the front right door by hand so that it does not fall down, remove the door with the hinge pin held up.



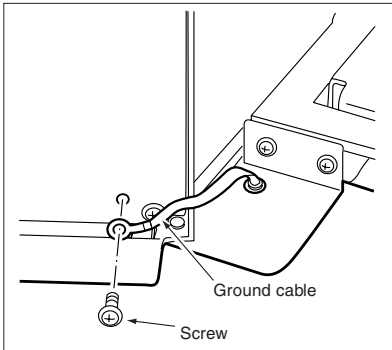
- (5) Reinstall the above parts following the removal steps in reverse.

[4] Removing and Reinstalling the Front Left Door

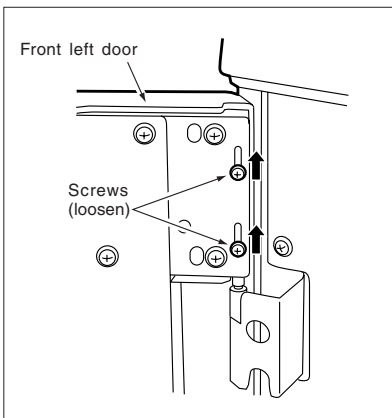
⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the front left door.
- (2) Remove the screw to disconnect the ground cable.



- (3) Loosen the two screws securing the hinge.
- Caution:** When loosening the screws, hold the top of the door by hand so that it does not fall down.
- (4) Remove the door with the hinge pin held up.



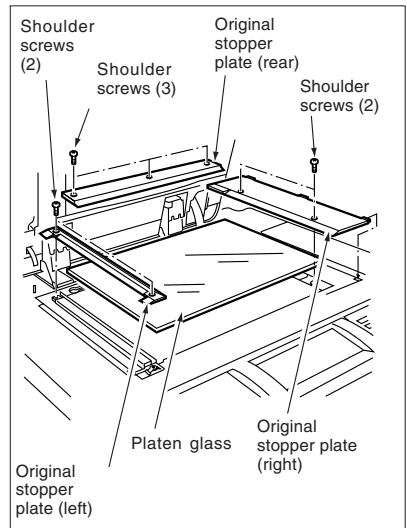
- (5) Reinstall the above parts following the removal steps in reverse.

[5] Removing and Reinstalling the Operation Panel

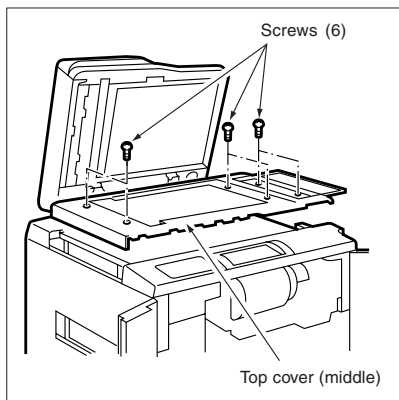
⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

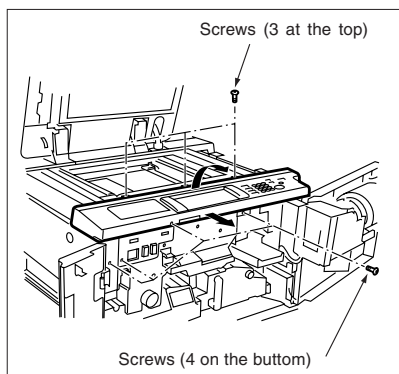
- (1) Open the RADF.
- (2) Remove the two shoulder screws to remove the original stopper plate (right).
- (3) Remove the three shoulder screws to remove the original stopper plate (rear).
- (4) Remove the two shoulder screws to remove the original stopper plate (left).
- (5) Remove the platen glass.



- (6) Remove the six screws to detach the top cover (middle).
 (7) Open the front right door and the front left door.



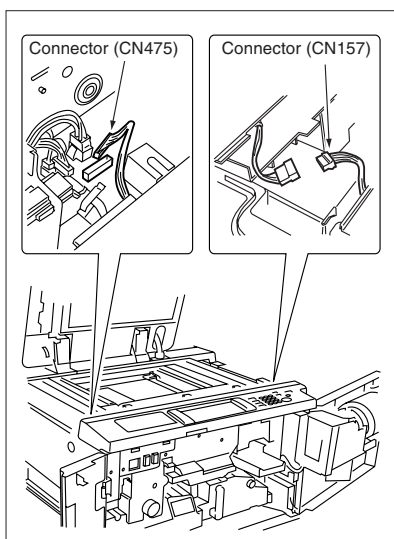
- (8) Draw out the toner supply unit. (See "TONER SUPPLY UNIT.")
 (9) Remove the seven screws (three at the top and four on the bottom).
 (10) Draw out the operation panel forward.



Caution: When removing the operation panel, pay attention to the following points:

- The operation panel and main body are connected with a wiring harness. Moving the operation panel too far away from the main body could break the wiring harness.
- Care should be taken not to damage the display section.

- (11) Disconnect the two relay connectors (CN475, CN157) and remove the operation panel.



- (12) Reinstall the above parts following the removal steps in reverse.

DRIVE SECTION

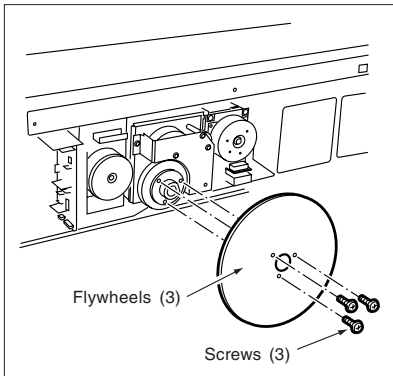
[1] Removing and Reinstalling the Drum Motor

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution: Be sure to draw the drum unit out of the main body before removing or reinstalling the drum drive motor. If you fail to draw out the drum unit, the cleaning blade may be damaged because the drum rotates when installing or removing the flywheel or gear.

a. Procedure

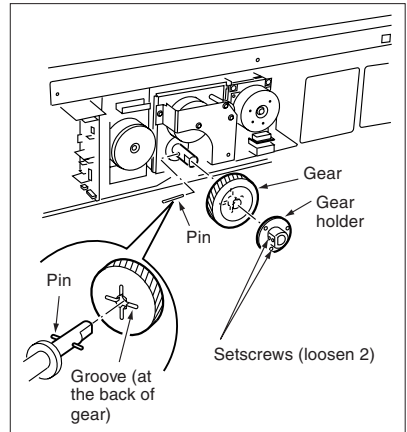
- (1) Draw the drum unit out of the main body. (See "DRUM UNIT.")
- (2) Remove the rear cover. (See "EXTERNAL SECTION.")
- (3) Remove the three screws to remove the three flywheels.



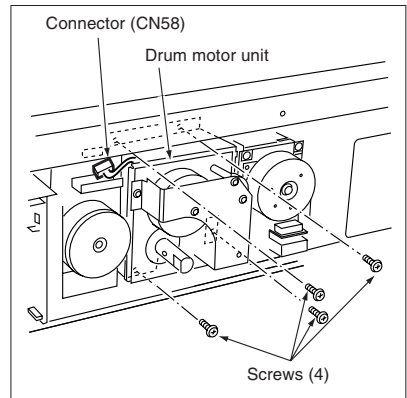
- (4) Loose the two setscrews to remove the gear holder, gear, and pin from the shaft.

Caution 1: Install the gear with the shaft pin fit into the groove at the back of the gear. As the pin inserted in the shaft moves freely, take care not to drop or lose it.

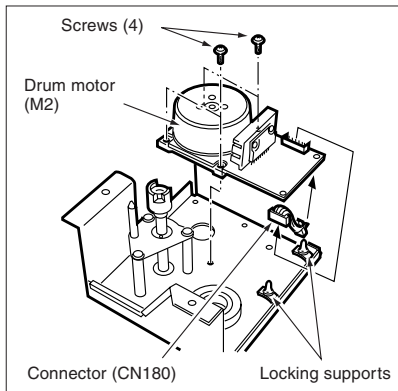
Caution 2: Secure the gear holder with the setscrews while pressing the gear holder against the gear.



- (5) Disconnect the connector (CN58) and remove the four screws to detach the drum motor unit.



- (6) Disconnect the connector (CN180) and remove the four screws and two locking supports to remove the drum motor from the drum motor unit.



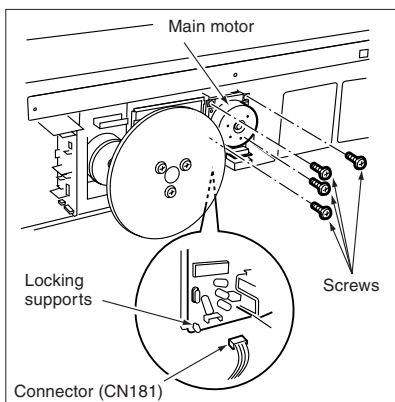
- (7) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the gear holder, set it to fit to the gear, then secure it by the set screw.

[2] Removing and Reinstalling the Main Motor

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

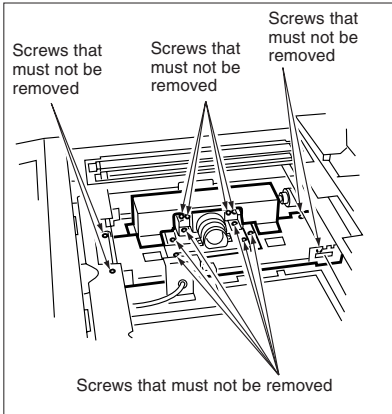
- (1) Remove the rear cover. (See “EXTERNAL SECTION.”)
- (2) Disconnect the connector (CN181).
- (3) Remove the four screws to release the motor board locking supports.
- (4) Remove the main motor from the main body.



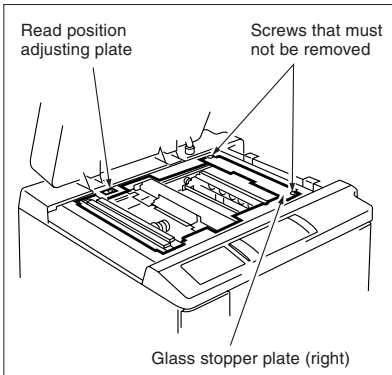
READ SECTION

[1] Screw that Must not be Removed/ Loosened

a. 14 screws securing the CCD unit



b. One screw securing the read position adjusting plate and two screws securing the glass stopper plate (right)



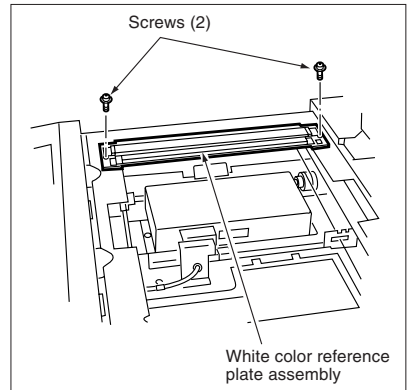
[2] Removing and Reinstalling the CCD Unit

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

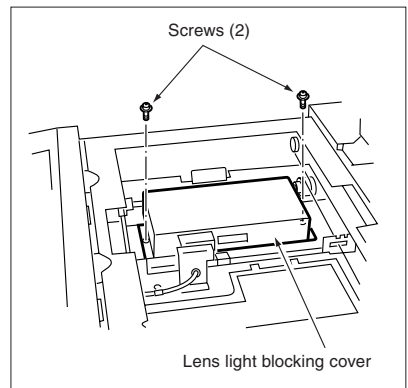
Caution: Be sure to perform image adjustment after installing the CCD unit. (See "ADJUSTMENT.")

a. Procedure

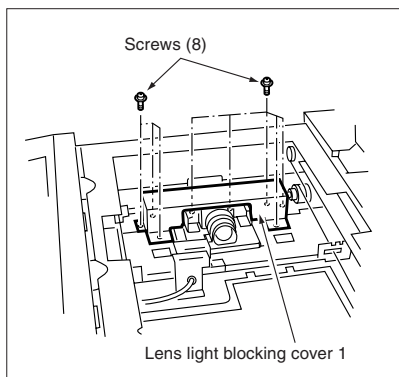
- (1) Remove the original stopper plates (right, rear, and left), platen glass, and top cover (middle). (See "EXTERNAL SECTION.")
- (2) Remove the two screws to detach the white color reference plate assembly.



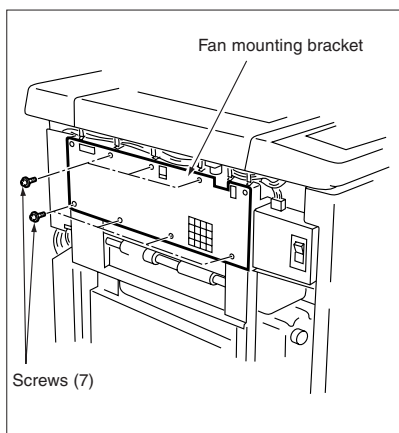
- (3) Remove the two screws to detach the lens light blocking cover 2.



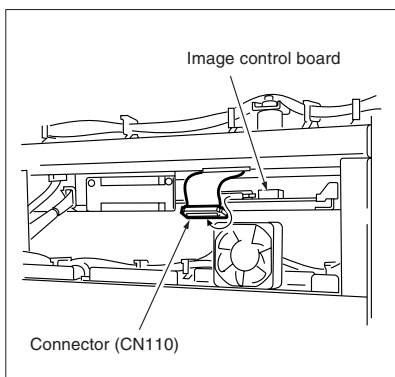
- (4) Remove the eight screws to detach the lens light blocking cover 1.



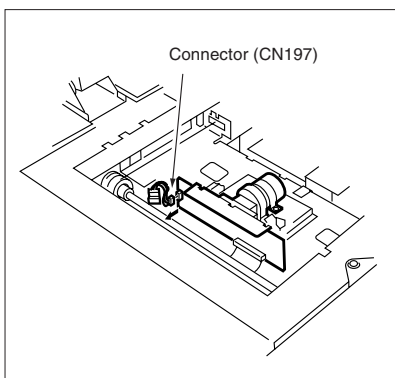
- (5) Remove the left side cover. (See "EXTERNAL SECTION.")
 (6) Remove the seven screws to detach the fan mounting plate.



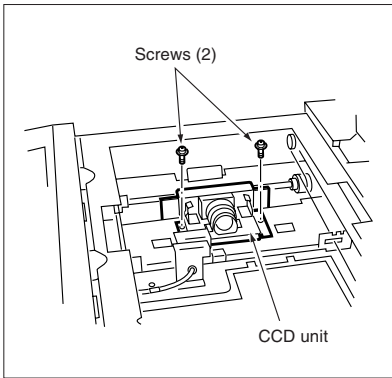
- (7) Disconnect the connector (CN110) from the image control board.



- (8) Disconnect the connector (CN197) from the CCD unit.



- (9) Remove the two screws to detach the CCD unit.



- (10) Reinstall the above parts following the removal steps in reverse.

[3] Replacing the Exposure Lamp

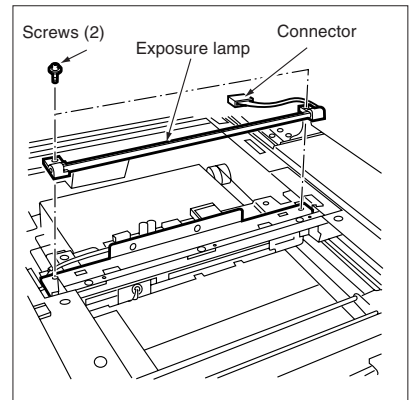
⚠ Caution 1. Be sure the power cord has been unplugged from the wall outlet.

⚠ Caution 2. Do not touch the exposure lamp with bare hands.

Caution: Be sure to perform image adjustment after installing the exposure lamp. (See "ADJUSTMENT.")

a. Procedure

- (1) Remove the original stopper plates (right, rear, and left), platen glass, and top cover (middle). (See "EXTERNAL SECTION.")
- (2) Move the exposure unit to the notch in the main body frame on the paper exit side.
- (3) Remove the connector and two screws to detach the exposure unit.



- (4) Reinstall the above parts following the removal steps in reverse.

[4] Replacing and Reinstalling the Exposure Unit

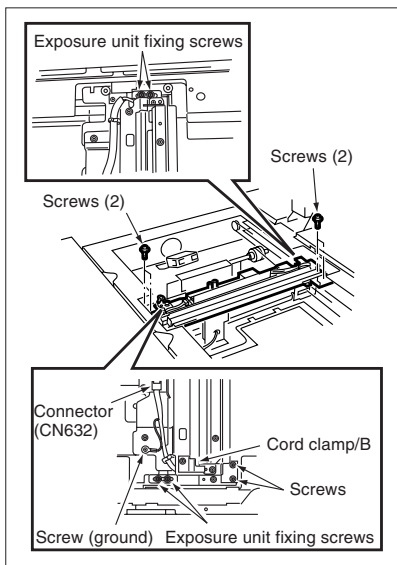
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution 1: When installing the exposure unit, use the optical unit positioning jig.

Caution 2: Be sure to perform image adjustment after installing the exposure lamp. (See "ADJUSTMENT.")

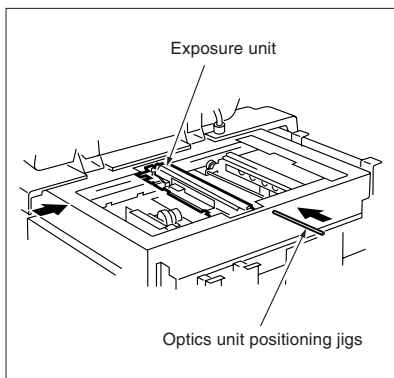
a. Removal procedure

- (1) Remove the original stopper plates (right, rear, and left), platen glass, and top cover (middle). (See "EXTERNAL SECTION.")
- (2) Remove the operation panel. (See "EXTERNAL SECTION.")
- (3) Move the exposure unit to the notch in the main body frame on the paper exit side.
- (4) Remove the two screws to detach the cord clamp (B).
- (5) Remove the screw to remove the ground terminal.
- (6) Disconnect the connector (CN632).
- (7) Remove the four screws to detach the exposure unit.



b. Installation procedure

- (1) Insert the optics unit positioning jig in the hole at the exposure unit mounting position from the front.
- (2) Slide the exposure unit to the paper feed side until it touches the optical unit positioning jig.



- (3) Secure the four screws to attach the exposure unit to the optics wire mounting bracket.
- (4) Remove the optics unit positioning jig.
- (5) After the procedure (4), reinstall the parts removed in "a. Removal procedure" following the removal steps in reverse.

[5] Installing the Optics Wire

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

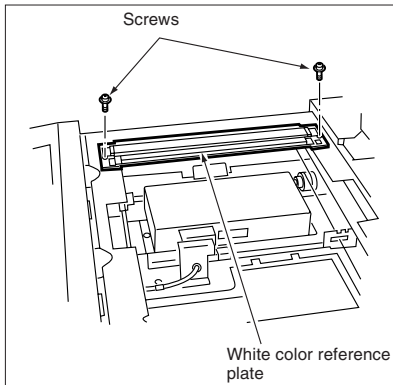
Caution 1: When winding the optics wire around the pulley, be sure to run the wire tightly so that it does not ride on the side of the pulley.

Caution 2: When re-tensioning or replacing the optics wire, be sure to use the optics positioning jig.

Caution 3: Be sure to perform image adjustment after replacing or re-installing the wire. (See "ADJUSTMENT")

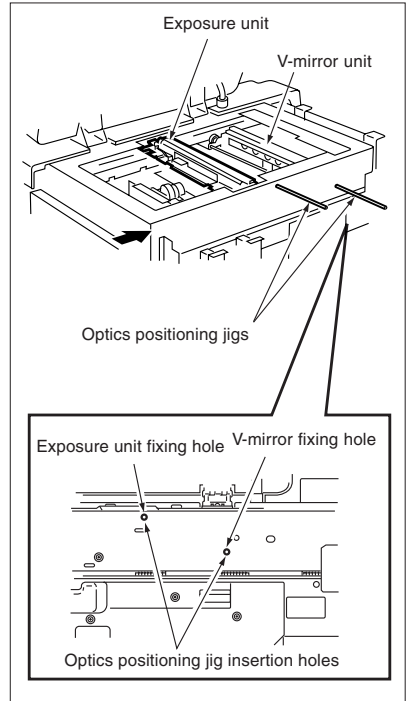
a. Procedure

- (1) Remove the exposure unit.
- (2) Remove the two screws to detach the white color reference plate.



- (3) Move the V-mirror unit toward the paper feed side, then insert the optics positioning jigs from the front to secure the V-mirror unit. Ensure that the optics positioning jigs pass through the V-mirror unit.

- (4) Insert the optics positioning jigs in the holes at the exposure unit mounting position from the front.

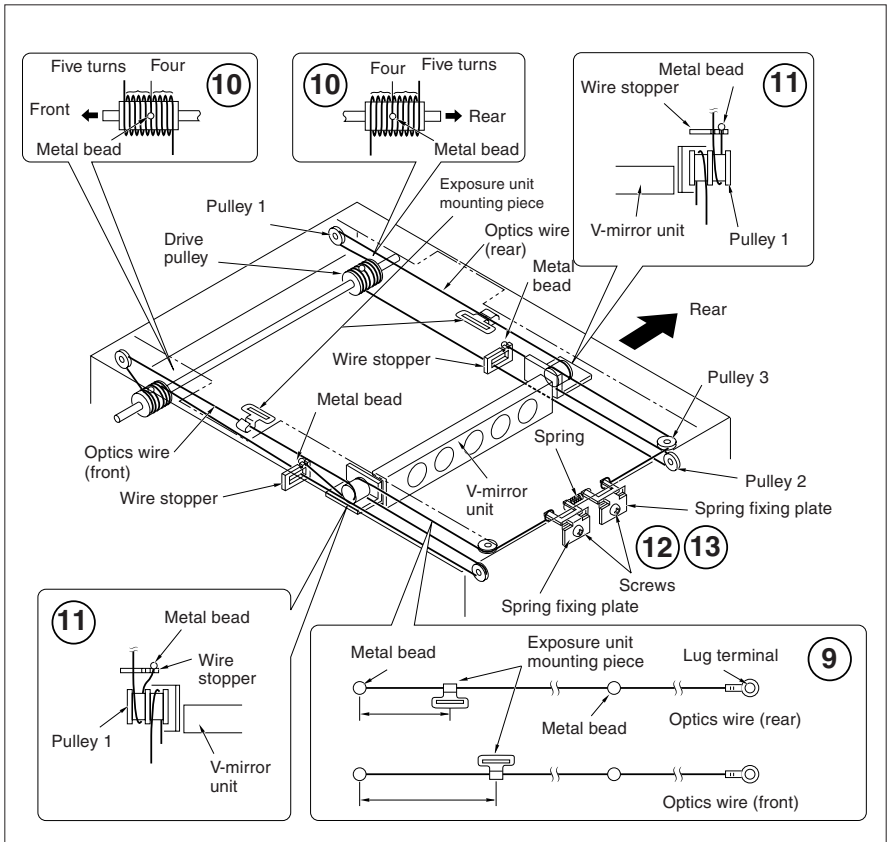


- (5) The exposure unit mounting plate is installed on each optics wire. The position of mounting plate differs depending on whether it is installed on the front or rear wire. Use the wire on which the mounting plate is installed nearer to the metal bead at the end, at the rear.
- (6) Place the metal bead at the midpoint of each optics wire in the mounting hole in the drive pulley. Starting at this point, wind the optics wire five turns to the outside and four times to the inside on the drive pulley.

Caution 1: Ensure that there is a metal bead at the end of the outer wire, and a wire terminal at the end of the inner wire.

Caution 2: Pull out the outer wire from above the drive pulley in the paper exit direction, and the inner wire from under the drive pulley in the paper feed direction.

- (7) After winding the outer wire, secure it to the wire stopper via the outside of pulley 1 and V-mirror pulley.



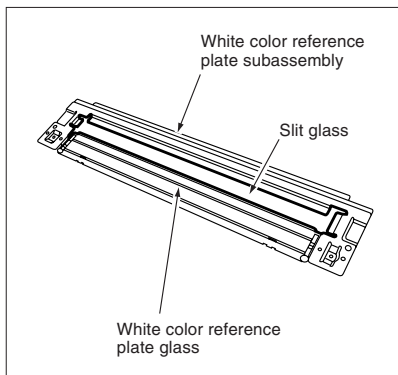
Caution: There are two grooves in the wire stopper. Ensure that the outer groove is at the rear and the inner groove is at the front.

- (8) Pass the inner wire through the notch in the wire stopper, reverse it at pulley 2, pass it along the inside of the V-mirror pulley and pulley 3, then attach the wire terminal to the spring fixing plate. At this time, secure the spring fixing plate temporarily with one screw.
- (9) Install the other wire following the same procedure.
- (10) Loosen each screw that was tightened temporarily, install the spring on the spring fixing plate, and tighten each screw.

[6] Cleaning the Slit Glass and White Color Reference Plate Glass

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

- (1) Open the RADF.
- (2) Remove the original stopper plates (right, rear, and left) and platen glass. (See "EXTERNAL SECTION.")
- (3) Remove the two screws to detach the white color reference plate subassembly.
- (4) Clean the slit glass portions of the removed white color reference plate subassembly and the glass surface of the white color reference plate, using drum cleaner and cleaning pad.

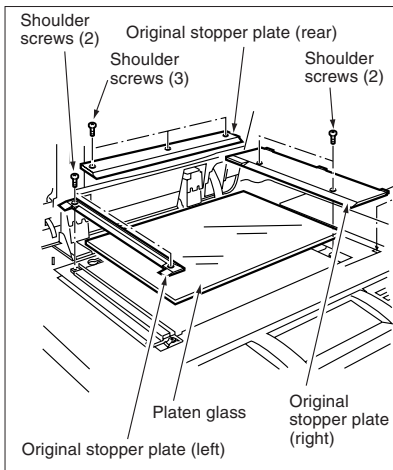


- (5) Reinstall the above parts following the removal steps in reverse.

[7] Cleaning the Platen Glass

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

- (1) Open the RADF.
- (2) Remove the original stopper plates (right, rear, and left) and platen glass. (See "EXTERNAL SECTION.")
- (3) Place the removed platen glass on the towel or rags and clean it using drum cleaner and cleaning pad.



- (4) Reinstall the above parts following the removal steps in reverse.

WRITE SECTION

[1] Removing and Reinstalling the Write Unit

⚠ Warning:

(1) Do not energize the write unit when it is not in the correct position.

(2) Never remove the write unit cover and the polygon unit cover.

If the laser beam gets into your eyes, you may lose your sight.

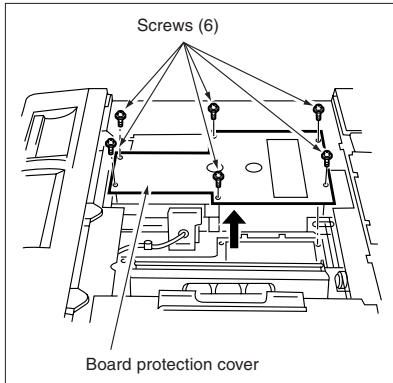
(3) Never remove the write unit for at least two minutes after turning OFF the main switch.

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

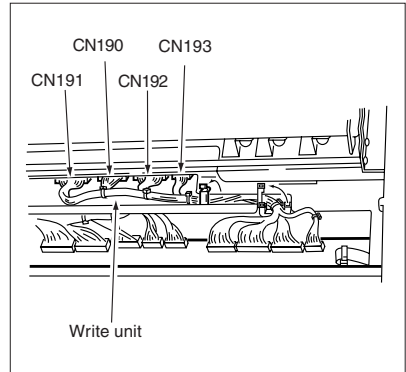
a. Procedure

(1) Remove the original stopper plates (right/rear/left) and platen glass. (See "EXTERNAL SECTION.")

(2) Remove the six screws to detach the board protection cover.



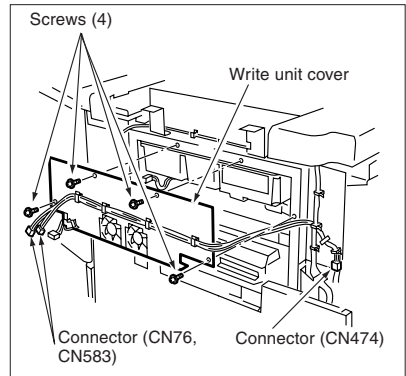
(3) Disconnect the four connectors (CN190, 191, 192, and 193) from the write unit.



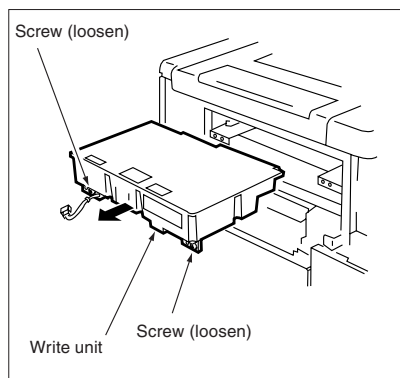
(4) Remove the right side cover (upper) (by removing the four screws).

(5) Disconnect the three connectors (CN76, 474 and 583).

(6) Remove the four screws to detach the write unit cover.



- (7) Loosen the two screws to draw out and remove the write unit.



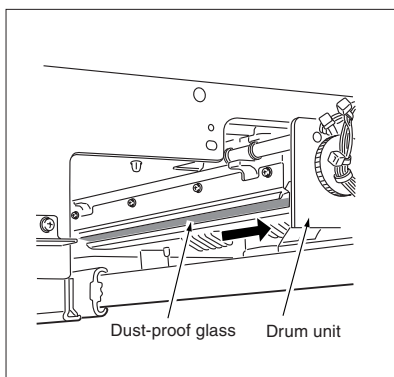
- (8) Reinstall the above parts following the removal steps in reverse.

[2] Cleaning the Dust-proof Glass

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Draw out the drum unit. (See "Drum Unit.")
- (2) Remove the dust-proof glass assembly by drawing it out forward.
- (3) Using a cleaning pad and blower brush, clean the dust-proof glass portions.



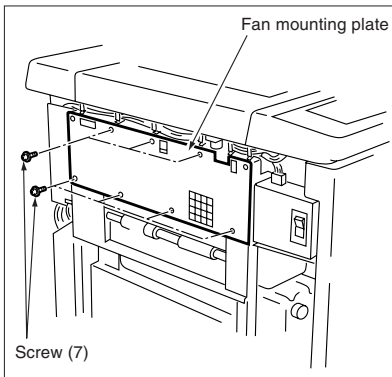
- (4) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Image Control Board

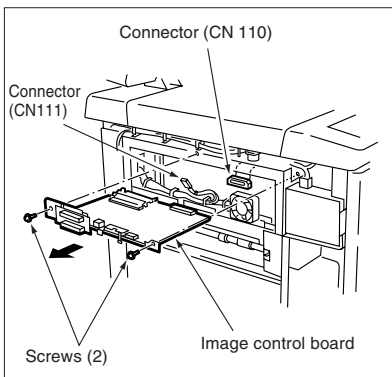
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the left side cover. (See "EXTERNAL SECTION.")
- (2) Remove the seven screws to detach the fan mounting plate.



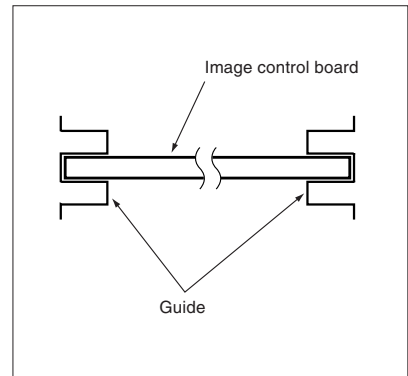
- (3) Remove the CCD flat cable connector (CN110) and ethernet cable connector (CN111).
- (4) Remove the two screws and the image control board.



- (5) Reinstall the above parts following the removal steps in reverse.

Caution 1: Insert the board along the guides in the main body.

Caution 2: Be sure the connector of the board is inserted securely.



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DRUM UNIT

[1] Removing and Reinstalling the Drum Unit

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

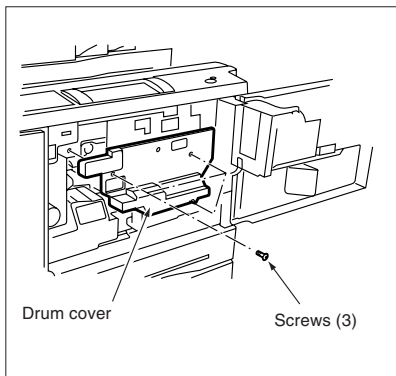
Caution 1: Be sure to put a drum cover over the removed drum unit and store the drum unit in a dark place.

Caution 2: When installing or removing the drum unit, do not rotate it in the direction opposite to the specified one. Rotating the drum unit in the opposite direction during copy operation could damage the cleaning blade.

Caution 3: When installing or removing the drum unit, take care not to touch the separation claw.

a. Procedure

- (1) Open the front right door to draw out the toner supply unit completely. (See "TONER SUPPLY UNIT")
- (2) Remove the three screws to detach the drum cover.



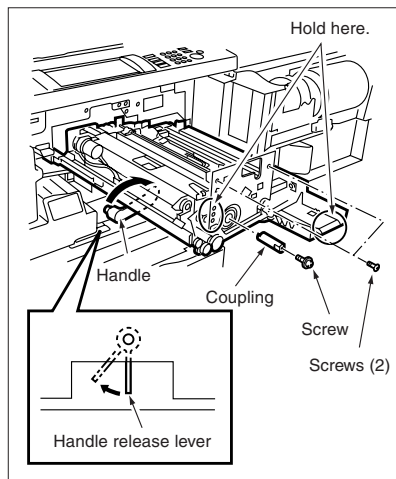
- (3) With the solenoid release lever under the ADU frame held down to the left, turn down the ADU frame drawing lever.

- (4) Remove the two screws securing the drum unit.

- (5) Remove the screw securing the coupling to detach the coupling.

- (6) Supporting the drum unit by hand at the two positions shown below, draw out the drum unit.

Caution: When drawing out the drum unit, do not grip the pipe in the toner recycle section.



- (7) Reinstall the above parts following the removal steps in reverse.

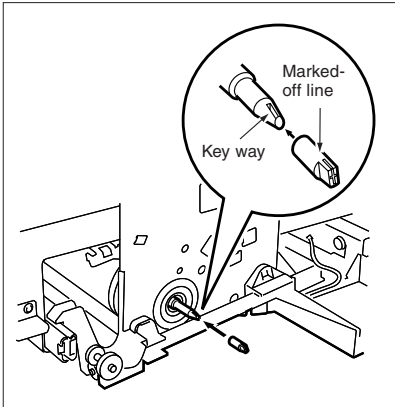
Caution: For how to install the coupling, see "[2] Installing the Coupling."

[2] Cleaning and Installing the Coupling

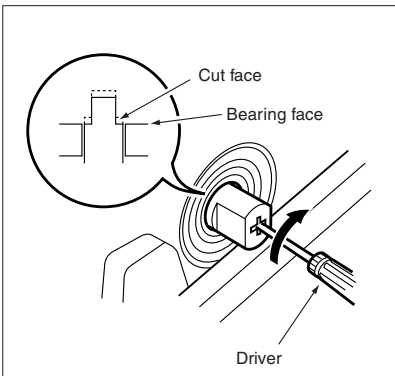
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Clean the outer surface of the coupling with drum cleaner.
- (2) Aligning the line marked on the coupling with the key way in the drum shaft, push in the coupling by hand.



- (3) While pressing the standard screwdriver tip against the coupling, turn the coupling clockwise until the cut face of the coupling is flush with the bearing face.



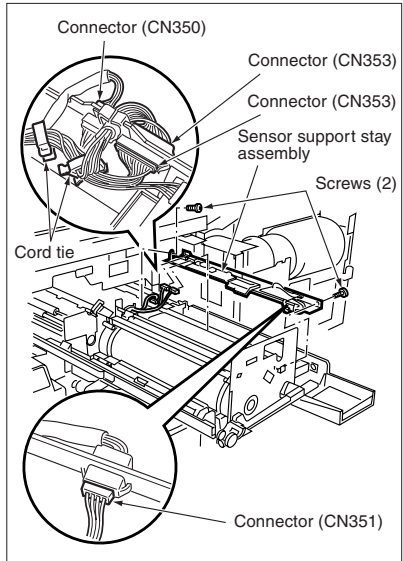
- (4) Tighten the screws.

[3] Removing and Reinstalling the Drum Temperature Sensor Board

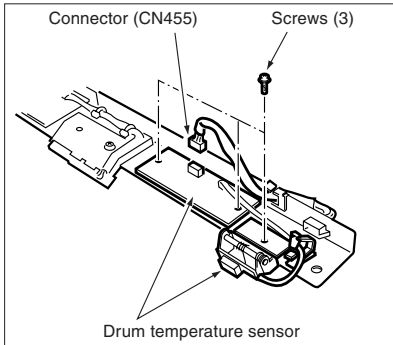
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Draw the drum unit out of the main body.
- (2) Disconnect the three connectors (350, 351, and 353) and remove two screws to detach the sensor support stay assembly.



- (3) Disconnect the connector (CN455) and remove three screws to detach the drum temperature sensor.



- (4) Reinstall the above parts following the removal steps in reverse.

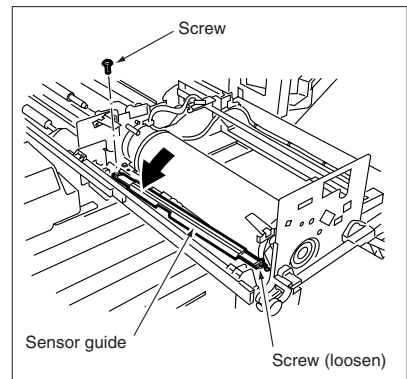
Caution: After reinstalling the drum temperature sensor board, visually check that the drum temperature sensor is in good contact with the drum.

[4] Cleaning the Toner Control Sensor Board

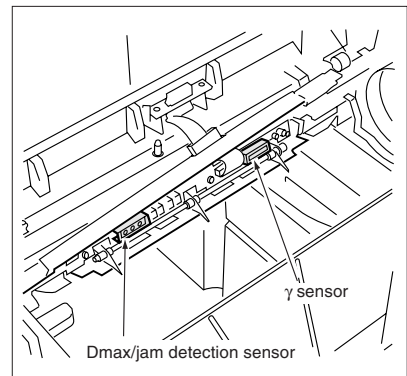
Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Draw the drum unit out of the main body.
- (2) Remove the drum cleaning unit. (See "CLEANING/TONER RECYCLE UNIT.")
- (3) Remove the screw at the back of the sensor guide and loosen the screw at the front to move the sensor guide.



- (4) Clean the sensors on the toner control sensor board (the Dmax/jam detection sensor at the front and the γ sensor at the back) using a blower brush.



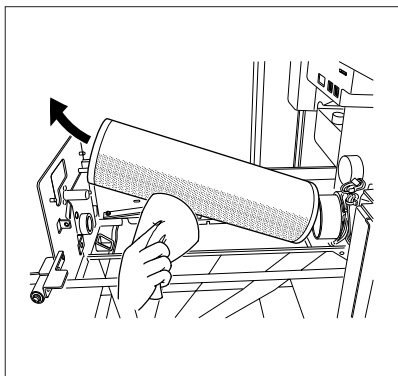
[5] Removing, Cleaning and Reinstalling the Drum

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution1: Be careful not to touch the drum or the cleaning blade with bare hands, or damage these parts.

Caution2: When leaving the drum to stand, be sure to put a drum cover over the drum and store it in a dark place.

Caution3: When reinstalling the drum, cleaning blade and toner guide brush, apply setting powder to the entire surface of the drum and also to the cleaning blade regardless of whether the parts are new or old.

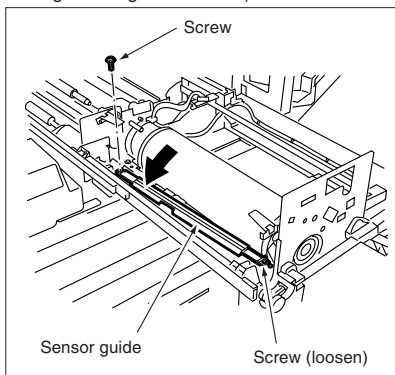


Caution4: After applying setting powder to the drum, carry out the following work before installing the drum unit in the main body.

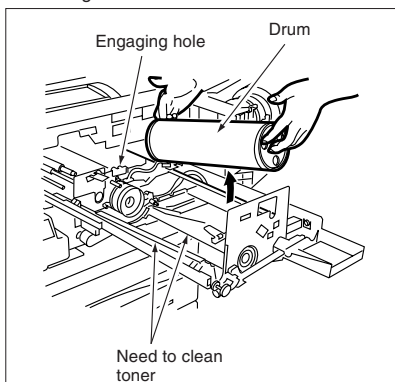
- 1) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).
- 2) When installing a new drum, be sure to enter the 25 mode and select "Copy Count by Parts to be Replaced" to reset drum counter. (See "ADJUSTMENT.")

a. Procedure

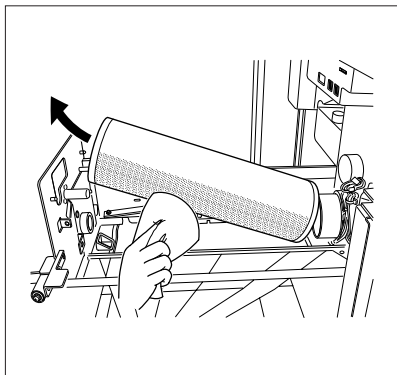
- (1) Draw the drum unit out of the main body.
- (2) Remove the charging corona unit, developing unit, developing suction assembly drum temperature sensor board, and cleaning unit. (See "CORONA UNIT SECTION," "DEVELOPING UNIT," and "CLEANING/TONER RECYCLE UNIT.")
- (3) Remove the screw at the back of the sensor guide and loosen the screw at the front to move the sensor guide (to prevent the drum from being damaged during reinstallation).



- (4) Supporting the drum at both ends with your fingers so that the drum surface is not damaged, slowly remove it upward (front side first).
- (5) Clean the hole (that engages with the bearing on the rear end of the drum shaft) on the rear side of the drum cartridge with drum cleaner.
- (6) Clean toner scattered around the drum installation area using a blower brush.



- (7) Reinstall the above parts following the removal steps in reverse.



[6] Removing and Reinstalling the Separation Claws

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution 1: Take care not to damage the drum when removing the separation claws.

Caution 2: Pay attention to the orientation and position of the separation claws when reinstalling them.

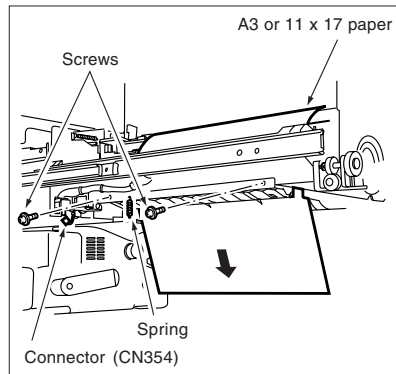
Caution 3: Do not touch the cleaning blade and drum with bare hands.

a. Procedure

- (1) Draw the drum unit out of the main body.
- (2) Remove the cleaning/toner recycle unit. (See "CLEANING/TONER RECYCLE UNIT.")
- (3) To protect the drum surface, set A3 (11 x 17) paper as shown below.

Caution: After installing the separation claw, remove the A3 (11 x 17) paper by pulling it down as shown below.

- (4) Disconnect the connector (CN354), and remove the spring and two screws to detach the separation claw unit.

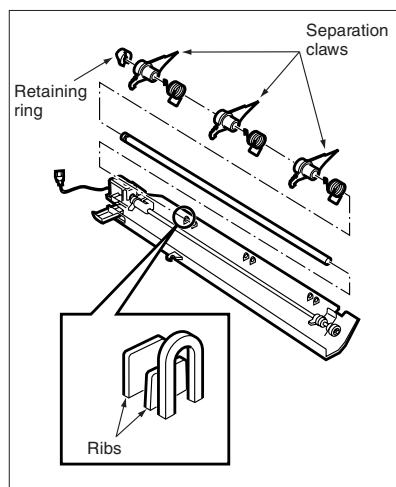


- (5) Remove the retaining ring and slide the shaft to remove the three separation claws.

Caution 1: Clean the separation claw drive shaft with alcohol when installing it.

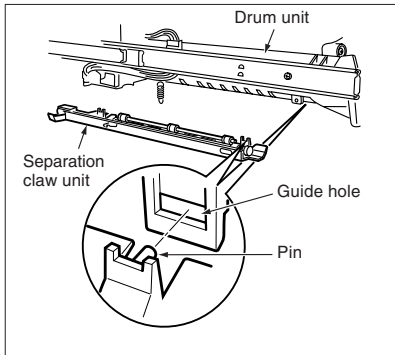
Caution 2: Must insert the retaining ring between the ribs.

Caution 3: After reinstalling the separation claws, make sure they move smoothly.



- (6) Reinstall the above parts following the removal steps in reverse.

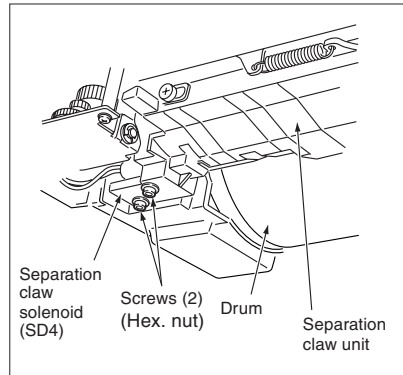
Caution: When installing the separation claw unit, be sure to fit the pin in the guide hole as shown below.



[Reference]

When you removed the separation claw unit (you need not remove it usually but you need to remove it only when replacing the solenoid), install it in the following manner:

- (1) Install the separation claw unit in the drum cartridge.
- (2) Tighten the solenoid screw when one of the separation claws, which is closest to the drum, contacts the drum. (Hex. nut, M3)



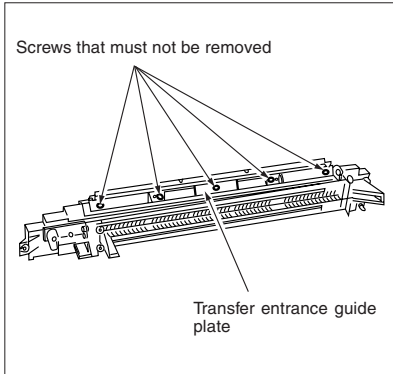
- (3) Set the drum cartridge in the main body and check the tips of the separation claws are off the drum surface.

Standard value of clearance: More than 0 mm up to 1 mm inclusive

CORONA UNIT SECTION

[1] Screws that Must not be Removed/ Loosened

- a. Five screws securing the transfer entrance guide plate



Caution 1: Do not strain the transfer entrance guide plate and guide rollers, for example, pressing down on them strongly, when removing the charging corona unit.

Caution 2: Take care not to damage the edge of the transfer entrance guide plate since it is deformed easily.

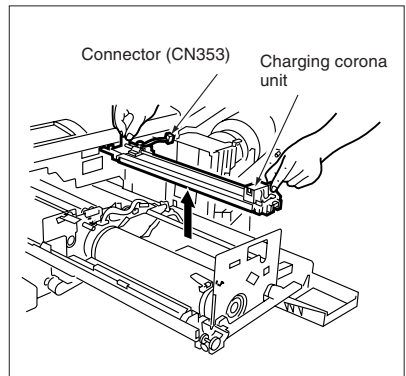
[2] Removing and Reinstalling the Charging Corona Unit

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution: When removing the charging corona unit, do not touch the mesh of the charge control plate.

a. Procedure

- (1) Remove the drum unit from the main unit. (See "DRUM UNIT.")
- (2) Disconnect the connector (CN353). Holding the charging corona unit at the positions shown below with both hands, remove it.



- (3) Reinstall the above parts following the removal steps in reverse.

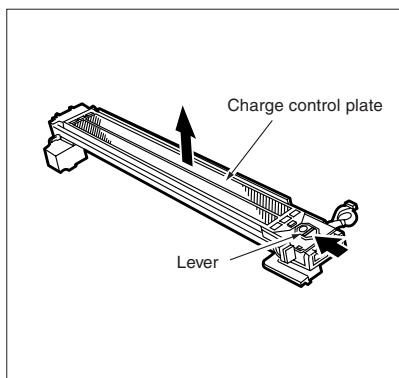
[3] Removing and Reinstalling the Charge Control Plate

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the charging corona unit.
- (2) Press the lever in the direction of the arrow to release the lock, then remove the charge control plate.

Caution: Do not loosen or tighten the screws securing the lever.



- (3) Reinstall the above parts following the removal steps in reverse.

[4] Replacing the Charging Wires

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

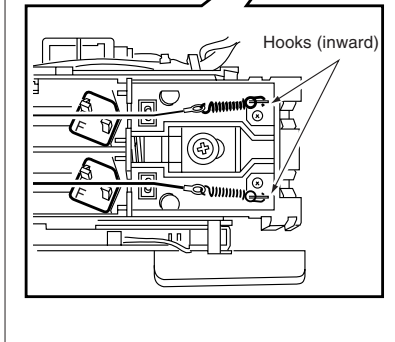
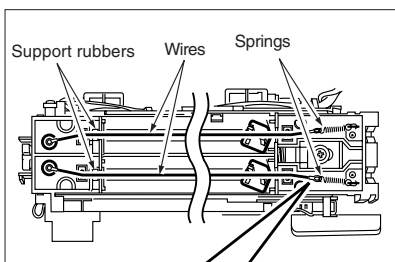
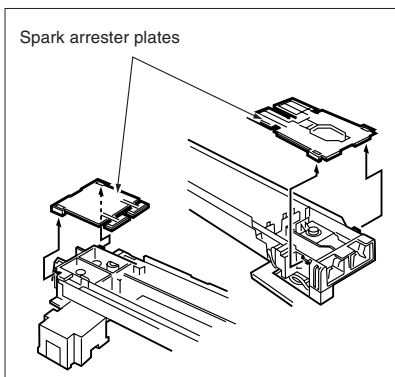
a. Procedure

- (1) Remove the charging corona unit.
- (2) Remove the charge control plate.
- (3) Remove the spark arrester plates (front and rear).

- (4) Remove the springs of wires (one each) to remove the wires.

Caution 1: Do not drop or lose the support rubbers when removing wires.

Caution 2: Reinstall wires so that their hooks are inside.



- (5) Reinstall the above parts following the removal steps in reverse.

[5] Removing and Reinstalling the Charging Wire Cleaning Pad

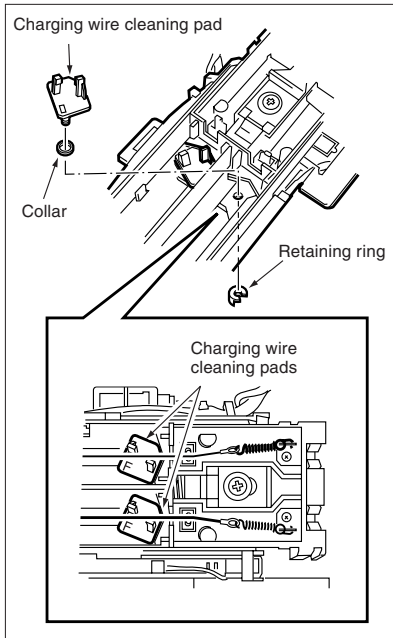
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the two charging wires.
- (2) Remove the two retaining rings to remove the charging wire cleaning pads.

Caution 1: Take care not to drop or lose the lower collars when removing the charging wire cleaning pads.

Caution 2: When reinstalling the charging wire cleaning pads, pay attention to the orientation shown below. Do not forget to attach the collars.



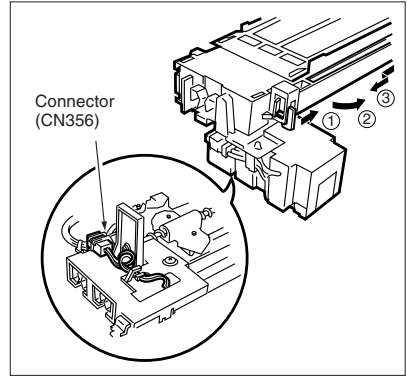
- (3) Reinstall the above parts following the removal steps in reverse.

[6] Removing and Reinstalling the PCL

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the charging corona unit.
- (2) Disconnect the connector (CN356) of the PCL and release the lock to remove the PCL.



- (3) Reinstall the above parts following the removal steps in reverse.

[7] Cleaning the Charging Corona Unit/ PCL

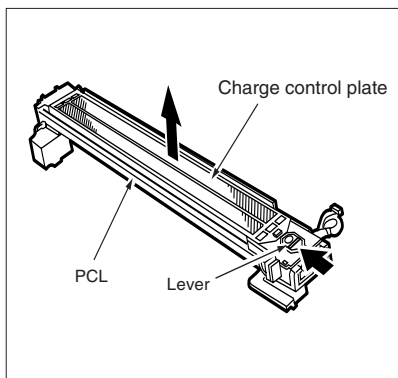
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the charging corona unit.
- (2) Remove the charge control plate and PCL.
- (3) Place the charge control plate on a flat place and clean its surface with light taps of the cleaning pad moistened with drum cleaner. Next, remove any remaining dirt with a blower brush.

Caution: Take care not to damage the mesh of the charge control plate during cleaning.

- (4) Clean the PCL with a cleaning pad moistened with drum cleaner.

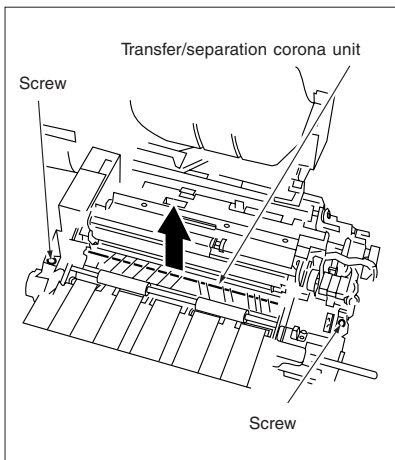


[8] Removing and Reinstalling the Transfer/Separation Corona Unit

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the toner supply unit. (See "TONER SUPPLY UNIT.")
- (2) Detach the ADU cover. (See "ADU UNIT.")
- (3) Loosen the two screws to remove the transfer/separation corona unit.



- (4) Reinstall the above parts following the removal steps in reverse.

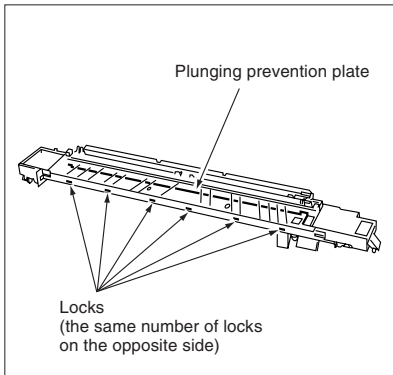
Caution: When installing the transfer/separation corona unit, make sure the cleaning gear coupling is engaged properly.

[9] Removing and Reinstalling the Plunger Prevention Plate

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the toner supply unit. (See "TONER SUPPLY UNIT.")
- (2) Draw the ADU frame out of the main body. (See "ADU UNIT.")
- (3) Remove the transfer/separation corona unit.
- (4) Release the twelve locks to remove the plunger prevention plate.



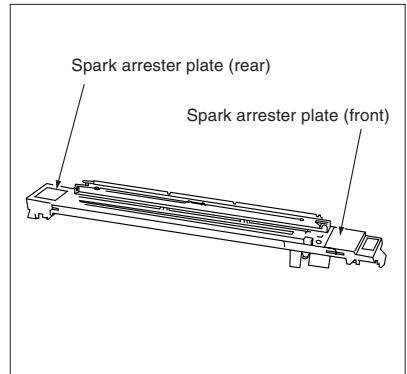
- (5) Reinstall the above parts following the removal steps in reverse.

[10] Replacing the Transfer/Separation Wires, Transfer/Separation Wire Cleaning Block and Support Rubbers

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

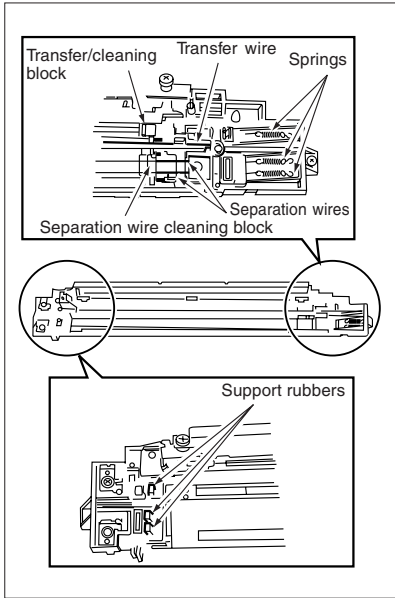
- (1) Open the toner supply unit. (See "TONER SUPPLY UNIT.")
- (2) Draw the ADU frame out of the main body. (See "ADU UNIT.")
- (3) Remove the transfer/separation corona unit.
- (4) Remove the plunger prevention plate.
- (5) Remove the spark arrester plates (front and rear).



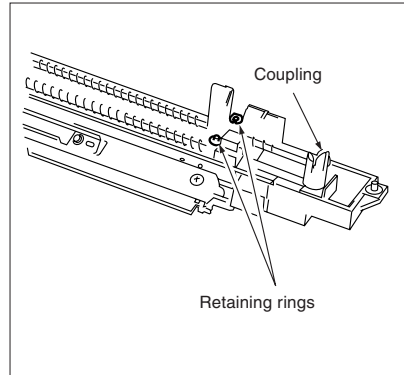
- (6) Remove the springs of wires (one each) to remove the wires.

Caution: When installing the springs, bend the edge of each spring in side.

- (7) Remove the three wires from cleaning blocks along with support rubbers.



- (8) Turn the transfer/separation corona unit upside down, remove the retaining rings, and remove the transfer wire cleaning block and separation wire cleaning block from the front side.



- (9) Reinstall the above parts following the removal steps in reverse.

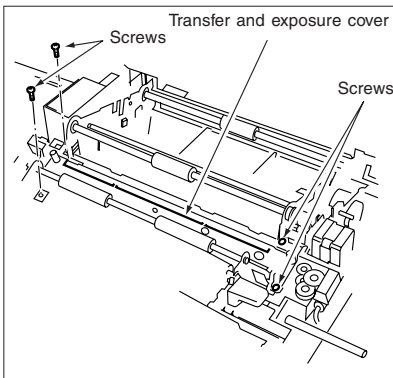
Caution: When installing the transfer/separation wires, check the coupling of the cleaning pad drive gear is engaged correctly.

[11] Removing and Reinstalling the TSL Unit

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

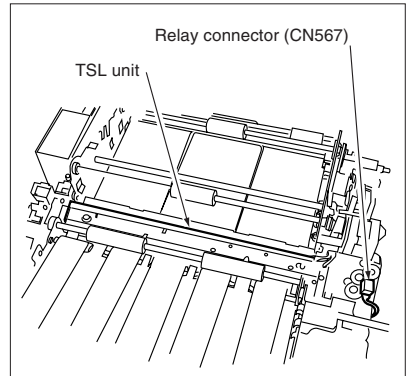
a. Procedure

- (1) Open the toner supply unit. (See "TONER SUPPLY UNIT.")
- (2) Draw the ADU frame out of the main body. (See "ADU UNIT.")
- (3) Remove the transfer/separation corona unit.
- (4) Remove the four screws to remove the transfer exposure cover.



- (5) Disconnect the relay connector (CN567) to remove the TSL unit.

Caution: Each relay connector consists of a male side and a female side. Be sure to remove only the male side (shown below) of the CN567 connector.



- (6) Reinstall the above parts following the removal steps in reverse.

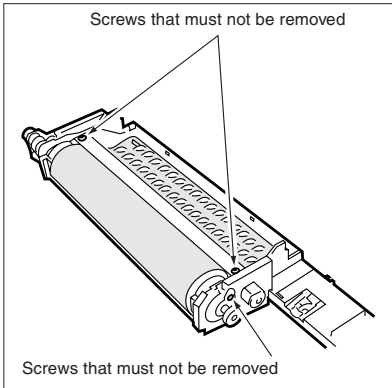
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DEVELOPING UNIT

[1] Screws that must not be Removed/ Loosened

a. Procedure

- (1) Two screws securing the toner transfer regulation plate.
- (2) One screw securing the magnet angle adjusting knob.

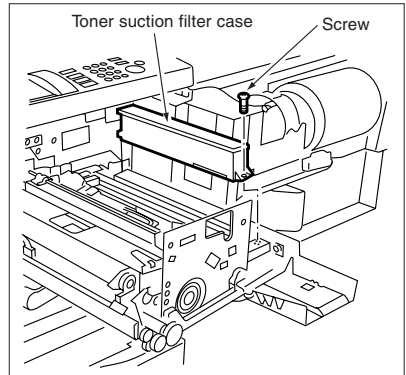


[2] Removing and Reinstalling the Developing Unit

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

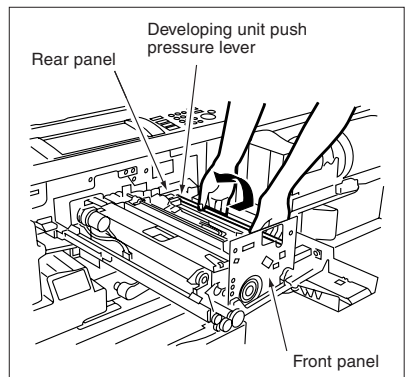
a. Procedure

- (1) Draw out the drum unit from the main body. (See "DRUM UNIT.")
- (2) Remove the screw to remove the toner suction filter case.

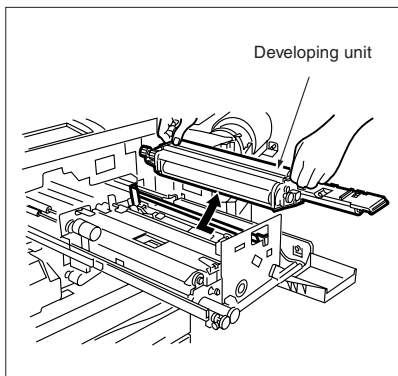


- (3) Release the developing unit push pressure lever.

Caution: When releasing the push pressure lever, do not touch the front and rear panels of the drum unit.



- (4) Supporting the developing unit at the positions shown below with both hands, remove it from the drum unit.



- (5) Reinstall the above parts following the removal steps in reverse.

Caution 1: When installing the developing unit, assure that the toner transfer sleeve does not contact with the front panel of the drum unit.

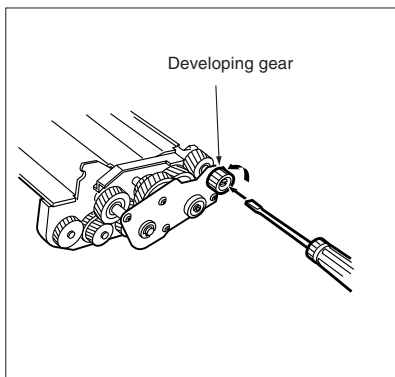
Caution 2: Never rotate the developing gear clockwise.

[3] Replacing the Developer

Caution 1: When replacing the developer in the developing unit, take care not to allow dirt to get into it.

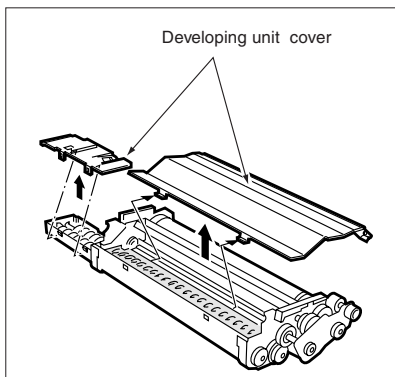
Caution 2: To rotate the developing gear counterclockwise using a standard screwdriver.

Caution 3: Never rotate the developing gear clockwise.

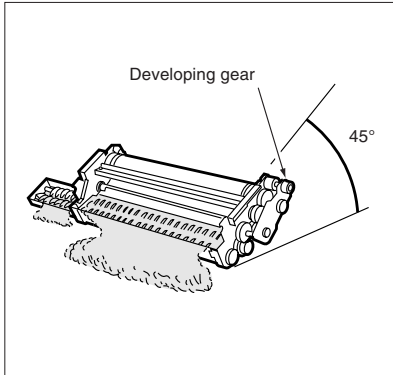


a. Procedure

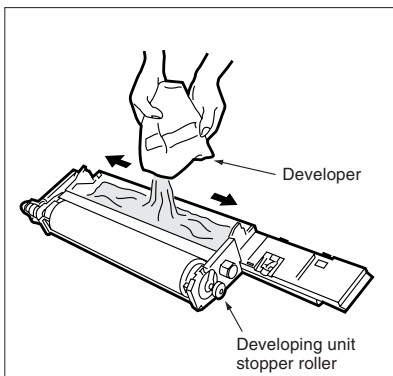
- (1) Draw out the drum unit from the main body. (See "DRUM UNIT.")
- (2) Remove the developing unit from the drum unit.
- (3) Release the hooks of the developing unit cover and remove it upward.



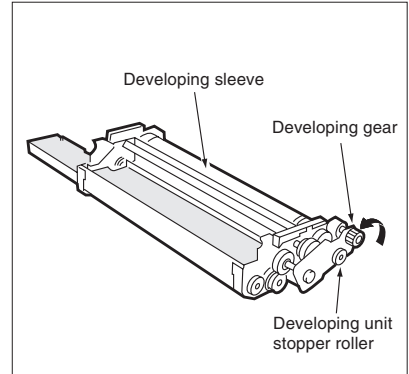
- (4) Tilt the developing unit about 45° and rotate the developing gear counterclockwise using a standard screwdriver to discharge all of the developing adhering to the inside of the developing unit and magnet roller.



- (5) Supply fresh developer evenly from the top of the agitator screws.
 (6) Rotate the developing gear until the developer enters the developing unit.
 (7) Perform steps (5) and (6) repeatedly to supply all of the developer.



- (8) Rotate the developing gear counterclockwise to check that the developer bristles along the entire length of the toner transfer sleeve.



- (9) Install the developing unit cover, then install the developing unit in the drum unit.

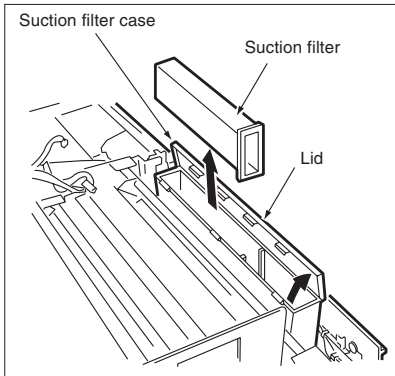
Caution: After installing the developing unit in the drum unit, make sure the developing unit stopper roller is in contact with the developing unit stopper plate (allocation of DSD).

[4] Removing and Reinstalling the Developing Suction Filter

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Draw out the drum unit from the main body. (See "DRUM UNIT.")
- (2) Open the lid of the developing suction filter case and remove the suction filter.



- (3) Reinstall the above parts following the removal steps in reverse.

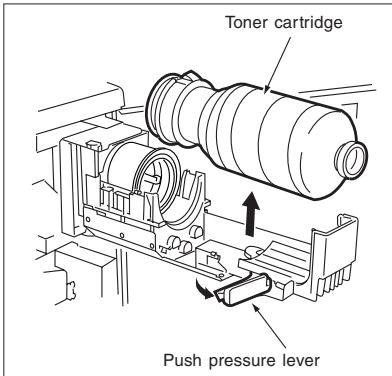
Caution: When installing the developing suction filter, assure that the lid of developing suction filter is closed completely.

TONER SUPPLY UNIT

[1] Replacing and Cleaning the Toner Cartridge

a. Procedure

- (1) Open the front left and right doors to pull forward the toner supply unit.
- (2) Pull out the toner cartridge locking lever to remove the toner cartridge.



- (3) After removing the toner cartridge, clean the area around the toner cartridge insertion hole with a cleaning pad.
- (4) Reinstall the above parts following the removal steps in reverse.

[2] Drawing out the Toner Supply Unit

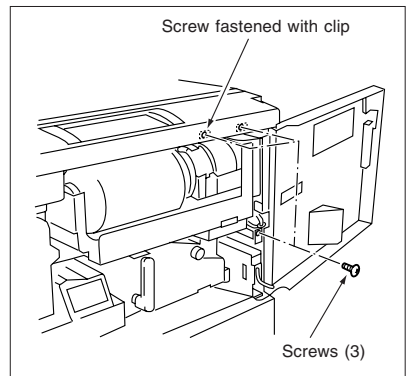
⚠ Warning: The hinge used in the toner supply unit mounting section moves in two steps. Take care not to get your finger caught in the hinge when drawing out the toner supply unit.

- ⚠ Caution:**
1. Be sure the power cord has been unplugged from the wall outlet.
 2. When setting the toner supply unit, do not apply excessive force in the vertical direction.
 3. After removed the screws, make sure that the shutter of the supply hole is open.
 4. Before setting the toner supply unit (supply hole joint), be sure to tighten the two screws other than the screws fastened with clip.

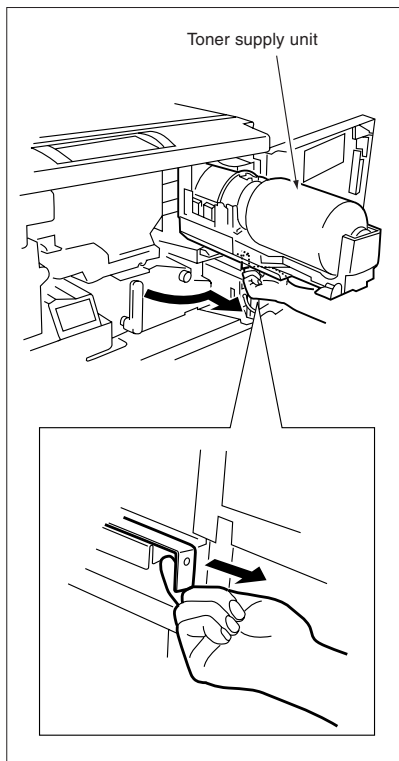
a. Procedure

- (1) Open the front left and right doors.
- (2) Remove the three screws.

Caution: The upper left (rear) screw is not removed because it is fastened with a clip. Loosen it completely.



- (3) Pull forward the toner supply unit. Gripping the portion shown below, pull out the unit completely.



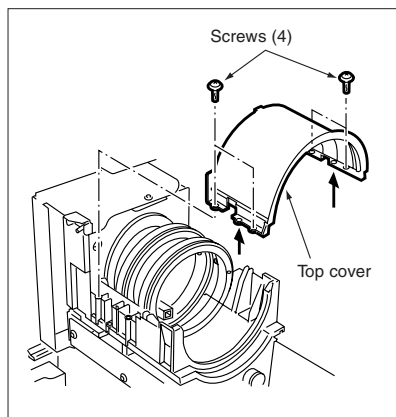
- (4) Reinstall the above parts following the removal steps in reverse.

[3] Removing and Reinstalling the Toner Supply Sleeves 1 and 2

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

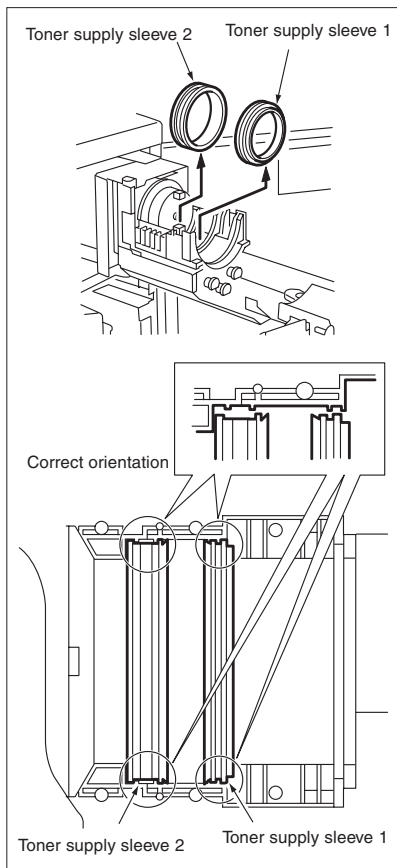
a. Procedure

- (1) Pull out the toner supply unit completely.
- (2) Remove the toner cartridge.
- (3) Remove the four screws to detach the top cover.
- (4) Remove toner supply sleeves 1 and 2.



Caution: Toner supply sleeves 1 and 2 must be installed observing the correct orientation shown below.

- (5) Reinstall the above parts following the removal



steps in reverse.

- (5) Reinstall the above parts following the removal

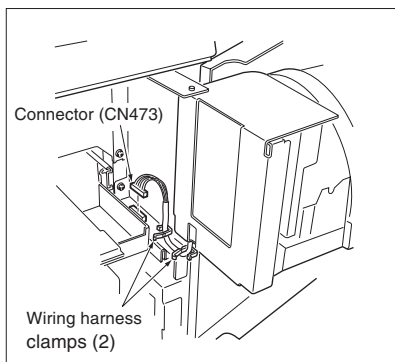
[4] Removing and Reinstalling the Toner Supply Unit

Caution: Be sure the power cord has been unplugged from the wall outlet.

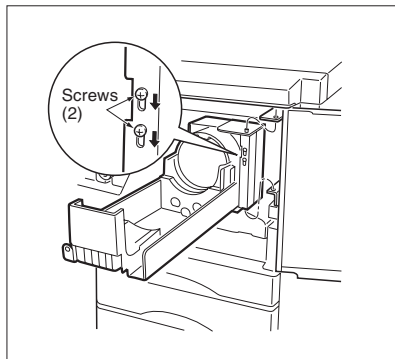
a. Procedure

- (1) Pull out the toner supply unit completely.
- (2) Remove the toner cartridge.
- (3) Disconnect the connector (CN473) and remove the wiring harness from the four wiring harness clamps.

Caution: Route the wiring harness carefully when reinstalling the toner supply unit, because it is a movable component.



- (4) Loosen the two screws to remove the toner supply unit.



steps in reverse.

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CLEANING/TONER RECYCLE UNIT

[1] Removing and Reinstalling the Cleaning/Toner Recycle Unit

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution 1: Do not touch the edges of the cleaning blade with bare hands.

Caution 2: Before reinstalling the cleaning unit, clean the cleaning/toner recycle unit with a blower brush and cleaning pad.

Caution 3: When reinstalling the cleaning unit, apply setting powder to the entire surface of the drum and cleaning blade regardless of whether the drum and cleaning blade are new or old.

Caution 4: When you have applied setting powder to the drum, carry out the following work before installing the drum unit on the main body:

- 1) To ensure accurate toner concentration, wipe scattered setting powder off the γ and Dmax sensors on the toner control sensor board with a rag moistened with alcohol.
- 2) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).

a. Procedure

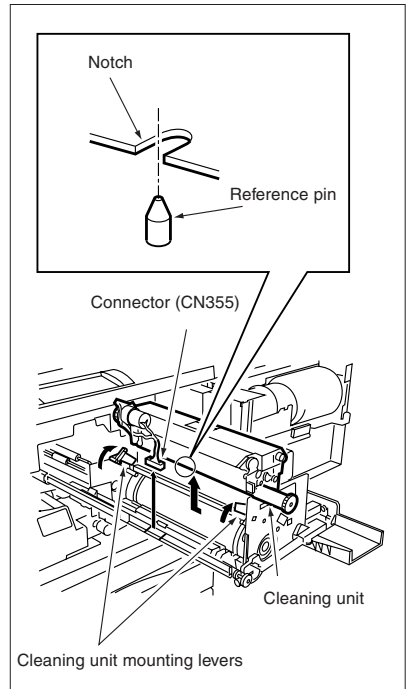
- (1) Manually turn the drum once.

Caution: Must turn the drum once to prevent toner on the brush falling.

- (2) Draw out the drum unit from the main body. (See "DRUM UNIT.")
- (3) Release cleaning unit release levers (on both sides).
- (4) Disconnect one connector (CN355) and remove the cleaning unit.

Caution 1: Remove the cleaning unit with its rear surface aligned with the ribs of the drum cartridge. (Tilt the cleaning unit approximately 15 degree.)

Caution 2: Remove the cleaning unit with drum cartridge reference pin in line with the notch of the cleaning unit.

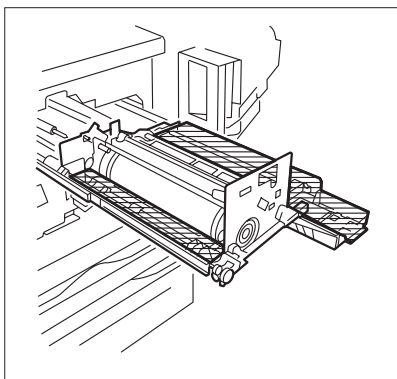


- (5) Reinstall the above parts following the removal steps in reverse.

[2] Cleaning the Cleaning/Toner Recycle Unit

a. Procedure

- (1) Remove the cleaning unit.
- (2) Clean the areas shown below with a blower brush and cleaning pad.



[3] Removing and Reinstalling the Cleaning Blade

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

Caution 1: Be sure to replace the following parts at the same time:

- Toner cleaning blades 1 and 2
- Toner guide brush/plunging prevention felt

Caution 2: Do not touch the edges of the cleaning blade with bare hands.

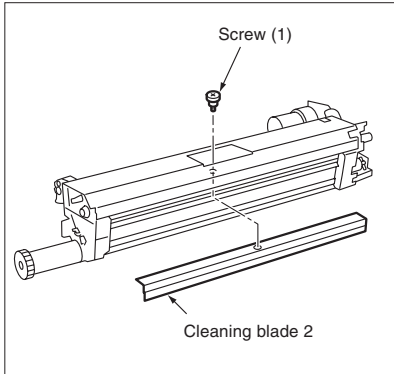
Caution 3: When reinstalling the cleaning blade, apply setting powder to the entire surface of the drum and cleaning blade regardless of whether the drum and cleaning blade are new or old.

Caution 4: When you have applied setting powder to the drum, carry out the following work before installing the drum unit on the main body:

- 1) To ensure accurate toner concentration, wipe scattered setting powder off the γ and Dmax sensors on the toner control board with a rag moistened with alcohol.
- 2) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).

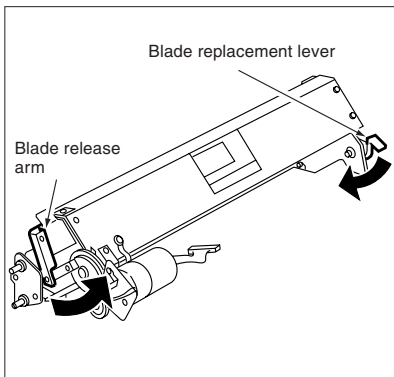
a. Procedure

- (1) Remove the cleaning unit.
- (2) Remove one screw to detach cleaning blade 2.



- (3) Clean the inside of the cleaning unit with a cleaning pad and blower brush.
- (4) Install two new cleaning blades.
- (5) Pull the blade release arm in the direction as indicated by arrow in the following figure.
- (6) Rotate the blade replacement lever all the way in the direction as indicated by arrow in the following figure, and then rotate the blade twice.

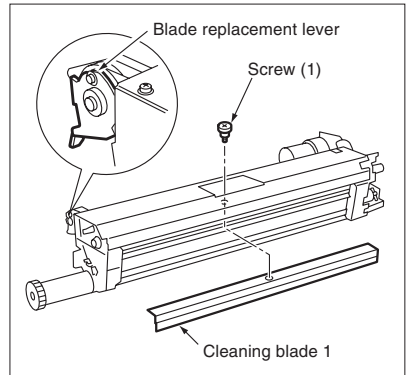
Caution: Do not release the blade release arm. Must keep pulling it.



- (7) Pull down the blade release arm.

Caution: Must keep the blade replacement lever being rotated in the arrow direction by hand.

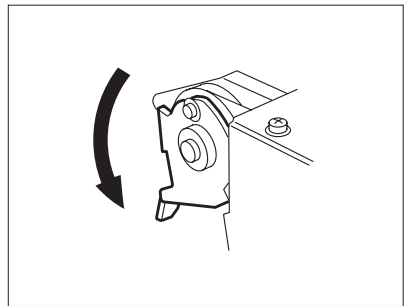
- (8) Release the blade replacement lever.
- (9) Remove one screw to detach cleaning blade 1.



- (10) Clean the inside of the cleaning unit with a cleaning pad and blower brush.
- (11) Install new cleaning blade 1.
- (12) Reinstall other parts following the removal steps in reverse.

Caution 1: After replacing cleaning blades 1 and 2, make sure that the blade replacement lever has been pulled to stretch the wire.

Caution 2: After replacing cleaning blades, make sure to perform Blade Setting Mode Adjustment in the 36 mode to prevent the blades from peeling.



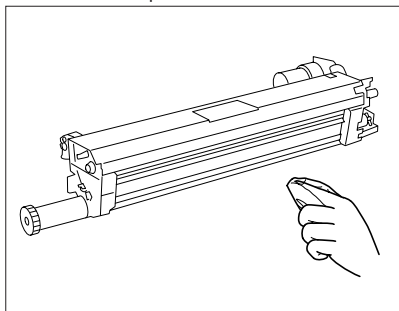
[4] Removing and Reinstalling the Toner Guide Brush and Plunger Prevention Felt

Caution 1: Be sure to replace the following parts at the same time:

- Toner cleaning blades 1 and 2
- Toner guide brush/plunging prevention felt

Caution 2: Do not touch the edges of the cleaning blade with bare hands.

Caution 3: When reinstalling the cleaning blade, apply setting powder to the entire surface of the drum and cleaning blade regardless of whether the parts are new or old.



Caution 4: When you have applied setting powder to the drum, carry out the following work before installing the drum unit on the main body:

- 1) To ensure accurate toner concentration, wipe scattered setting powder off the γ and Dmax sensors on the toner control sensor board with a rag moistened with alcohol.
- 2) With the charging corona unit and developing unit removed, turn the drum once (to prevent setting powder from scattering onto the charging corona unit, and to prevent image defects).

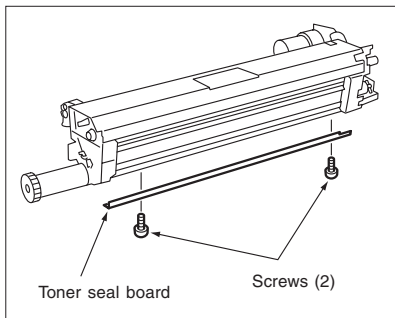
Caution 5: When installing the toner guide brush, apply an even coat of setting powder to the toner guide brush with it removed from the cleaner unit.

Caution 6: Do not touch the toner guide brush with bare hands. Do not allow the brush to come into direct contact with other objects.

a. Procedure

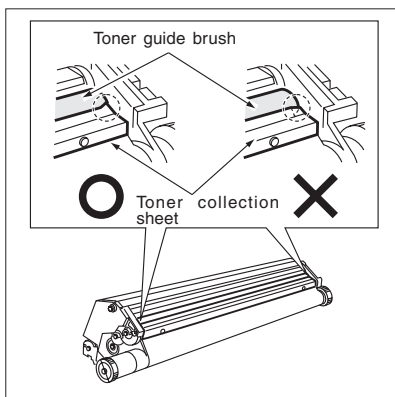
- (1) Remove the cleaning unit.
- (2) Remove the two screws to detach the toner seal plate.

Caution: When installing the toner seal plate, must start securing the front screw first.

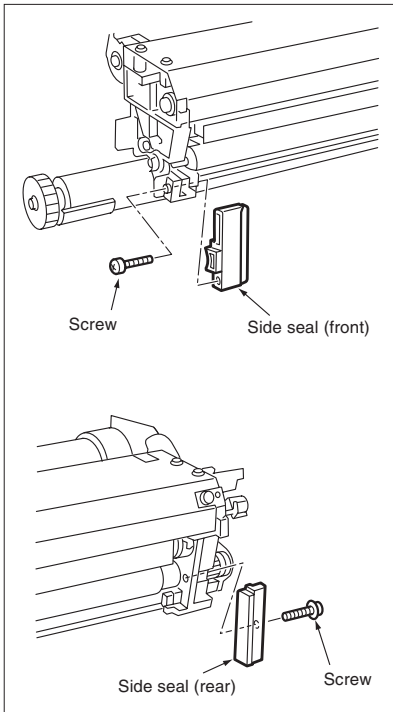


Caution: If the toner collection sheet on both ends of cleaner unit are bent over to the toner guide brush side, toner may be spilled from the toner collection unit. If this happens, correct bent sheet as follows.

- Correct bent toner collection sheet as it is in parallel with the toner guide brush or is slightly bent toward the front (less than 1 mm).

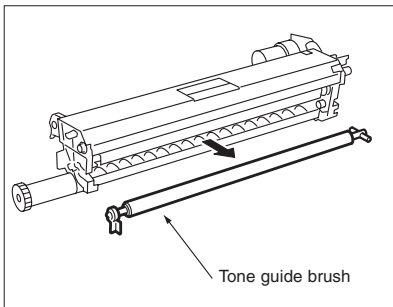


- (3) Remove the two screws to detach the two side seals (front/rear).

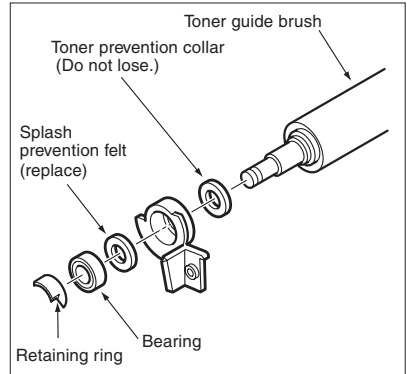


- (4) Remove one retaining ring to detach the toner guide brush.

Caution: Pull the toner guide brush leftward, then remove it forward with the gap between the brush and the bearing aligned with the side plate.



- (5) Remove one retaining ring and one bearing, then the plunging prevention felt from the toner guide brush shaft.



- (6) Reinstall the above parts following the removal steps in reverse.

[5] Replacing Guide Plate Assembly

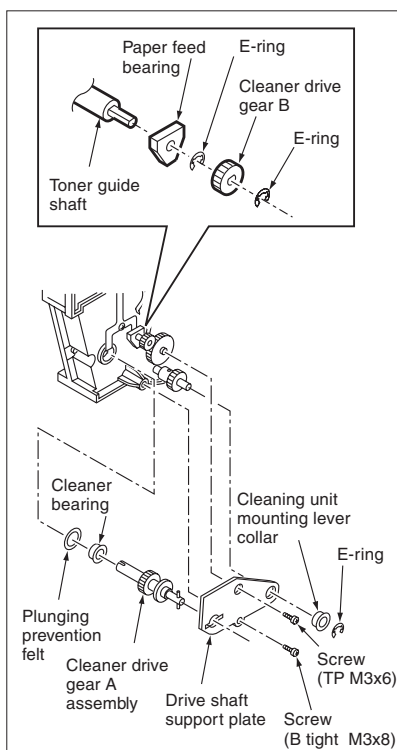
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the toner guide brush.
- (2) Remove one E-ring, and one cleaning unit mounting lever collar.
- (3) Remove two screws to detach the drive shafts support plate.
- (4) Remove the cleaner drive gear A assembly.
- (5) Remove the cleaner drive bearing and the plunging prevention felt.

Caution: Once the plunging prevention felt is removed, replace it.

- (6) Remove one E-ring from the toner guide shaft, then the cleaner drive gear B.
- (7) Remove one E-ring from the toner guide shaft, then the paper feed bearing.

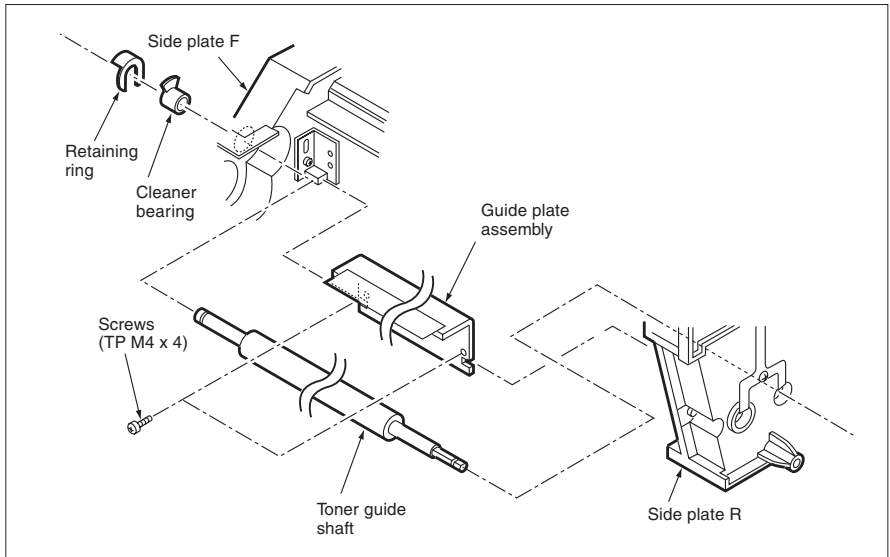


- (8) Remove one retaining ring from the toner guide shaft, then the cleaner bearing.
- (9) Remove the toner guide shaft.

Caution: When removing the toner guide shaft, remove it from the side plate R first, then from the side plate F.

- (10) Remove two screws to detach the guide plate assembly.

Caution: When installing the guide plate assembly, secure it as it touches the bottom.



- (11) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the drive reinforcing plate, do not confuse the tight screw with the TP screw. After securing the cleaning lever collar with the E-ring, secure the drive reinforcing plate by tightening the tight screw first and the TP screw next.

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PAPER FEED UNITS OF TRAYS 1 AND 2

Caution: The shape and mechanism of tray 1 is the same as those of tray 2. The procedure for removing and reinstalling tray 1 is explained below.

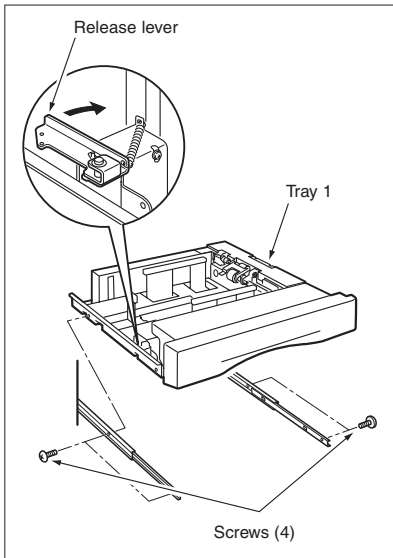
[1] Removing and Reinstalling Paper Feed Trays 1 and 2

⚠Warning: When removing the tray, stand in a proper position so that you do not hurt your back and waist. If the tray contains paper, remove all paper before removing the tray.

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the front left and right doors.
- (2) While pressing the tray release lever (at the left inward, draw out the tray.
- (3) Remove the four screws and remove tray 1 with it lifted.



- (4) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the Front Covers of Trays 1 and 2

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

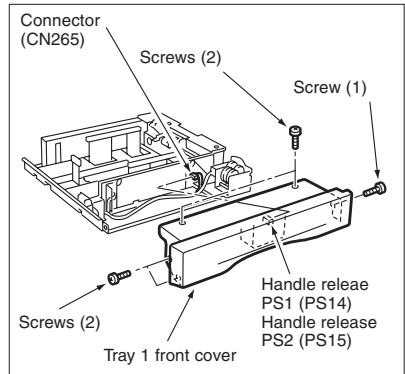
a. Procedure

- (1) Draw out paper feed tray 1.
- (2) Remove the five screws to remove the front cover of tray.

Caution: The front cover and main body of the tray are connected with a wiring harness of the handle release PS1 (PS14), handle release PS2 (PS15). Remove the front cover from the main body carefully so as not to break the wiring harness.

- (3) Disconnect the handle detection PS connector (CN265).

Caution: When reinstall the front cover, connect the handle detection PS connector without fail. If you forget to connect it, you cannot draw out any tray.

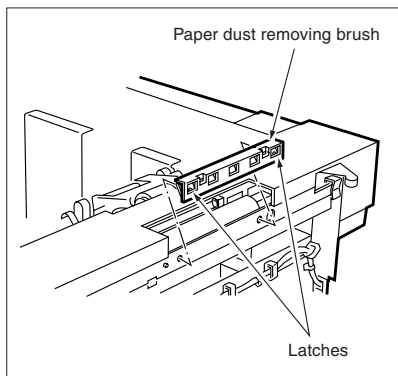


- (4) Reinstall the above parts following the removal steps in reverse.

[3] Cleaning the Paper Dust Removing Brush

a. Procedure

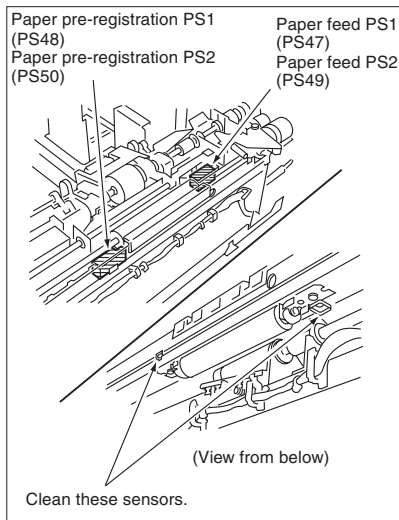
- (1) Draw out paper feed tray 1.
- (2) Release the two latches to detach the paper dust removing brush.
- (3) Clean the paper dust removing brush with a cleaning pad and blower brush.



[4] Cleaning the Paper Pre-registration PS/Paper Feed PS

a. Procedure

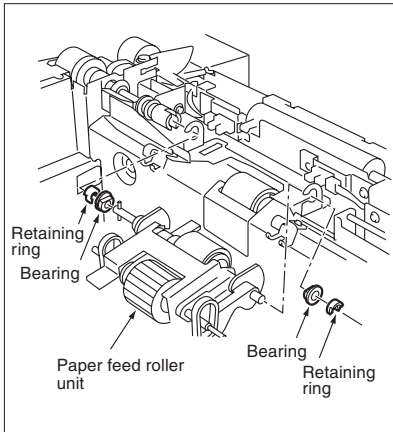
- (1) Draw out paper feed tray 1.
- (2) Clean the paper pre-registration PS1 (PS48) / the paper pre-registration PS2 (PS50) and the paper feed PS1 (PS47) / the paper feed PS2 (PS49) with a blower brush.



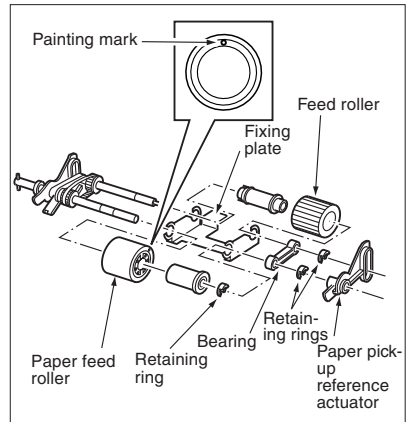
[5] Removing and Reinstalling the Paper Feed Roller and the Feed Roller

a. Procedure

- (1) Draw out paper feed tray 1.
- (2) Remove the two retaining rings and slide the two bearings outward to detach the paper feed roller unit.



- (3) Remove the following parts from the paper pick-up roller unit to remove individual rollers:
 - Retaining rings (three)
 - Bearing (one)
 - Paper feed reference actuator
 - Shafts (two)
 - Fixing plate



- (4) Reinstall the above parts following the removal steps in reverse.

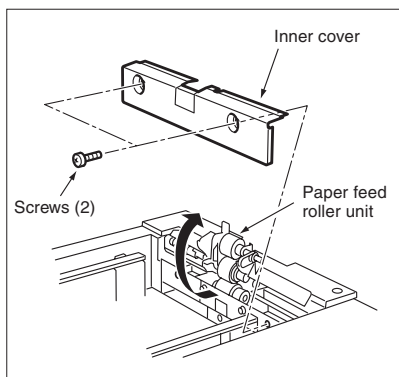
Caution 1: When reinstalling rollers, pay attention to their orientation.

Caution 2: Check whether grease or the like remains on each roller. If it does, wipe it.

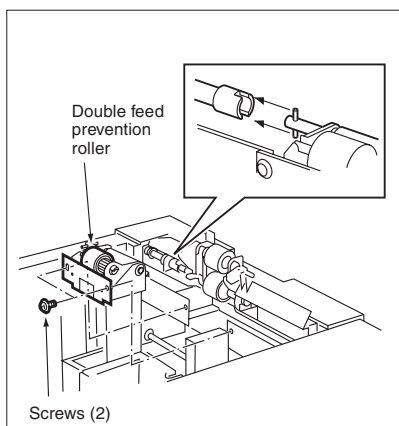
[6] Removing and Reinstalling the Double Feed Prevention Roller

a. Procedure

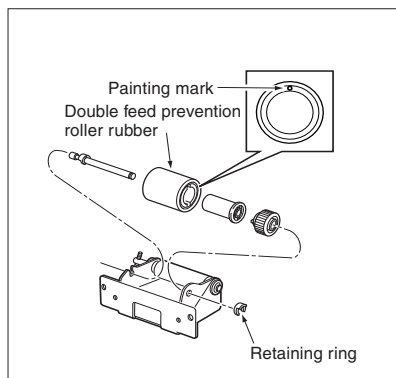
- (1) Draw out paper feed tray 1.
- (2) Raise the paper feed roller unit straight up.
- (3) Remove the two screws to detach the inner cover.



- (4) Remove the two screws to detach the double feed prevention roller.



- (5) Remove the retaining ring to detach the double feed prevention shaft with roller.
- (6) Slide the double feed prevention roller out of the shaft.



- (7) Reinstall the above parts following the removal steps in reverse.

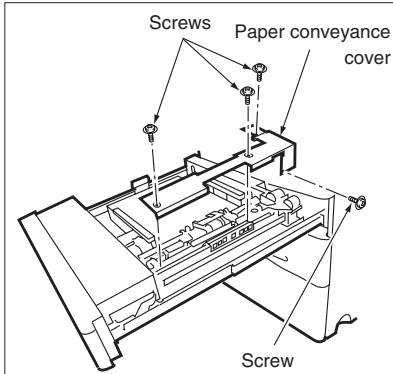
Caution 1: When reinstalling the double feed prevention roller, pay attention to their orientation.

Caution 2: Check whether grease or like remains on the double feed prevention roller. If it does, wipe it.

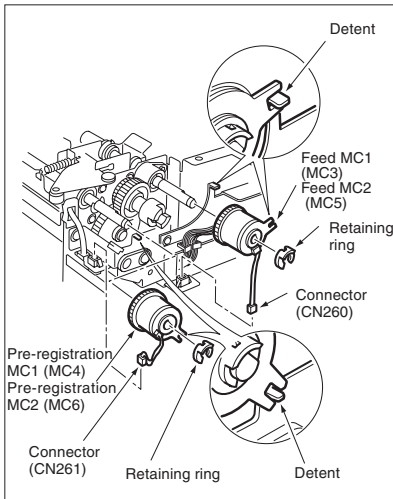
[7] Replacing the Pre-registration and the Feed Clutches (MCs)

a. Procedure

- (1) Draw out paper tray 1.
- (2) Remove four screws to detach the paper conveyance cover.



- (3) Disconnect the two connectors (CN261, CN260).
- (4) Remove the retaining ring to detach the pre-registration MC1 (MC4) / the pre-registration MC2 (MC6) and the feed MC1 (MC3) / the feed MC2 (MC5).



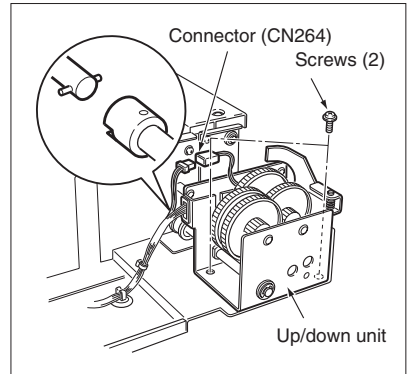
- (5) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling each MC, fit the detent in the slit in the MC.

[8] Removing and Reinstalling the Up/Down Unit

a. Procedure

- (1) Draw out paper feed tray 1.
- (2) Remove the front cover of the tray.
- (3) Disconnect the connector (CN264).
- (4) Remove the two screws to detach the up/down unit.



- (5) Reinstall the above parts following the removal steps in reverse.

[9] Replacing the Up/Down Plate Wires

Caution 1: This section explains how to replace the rear wires. To replace the front wires, remove the front cover of tray and paper up/down unit. The replacement procedure is the same as that for the rear wires.

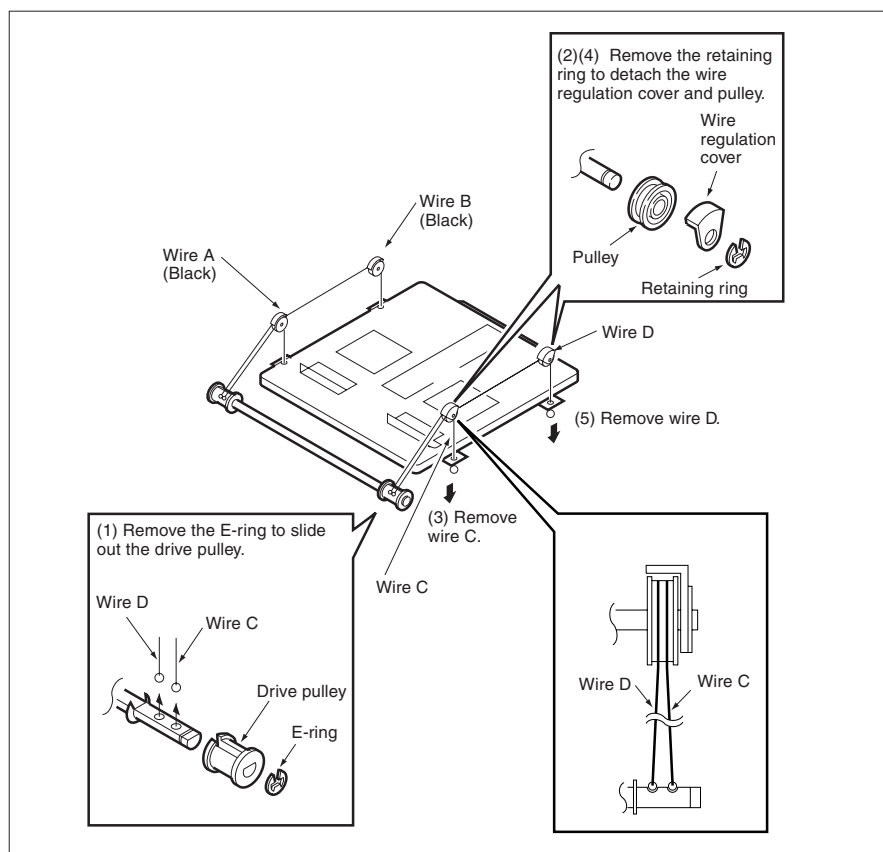
Caution 2: When replacement or reinstallation of the wires is complete, check whether the up/down plate moves up and down smoothly by rotating the up/down plate drive pulley by hand.

Caution 3: Be sure to install wires so that they do not cross nor ride over each other.

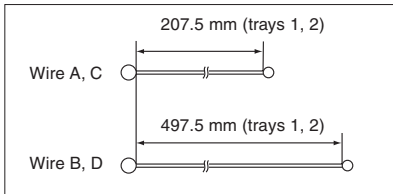
Caution 4: After installing the wires, adjust inclination of the up/down plate.

<Removing Wires>

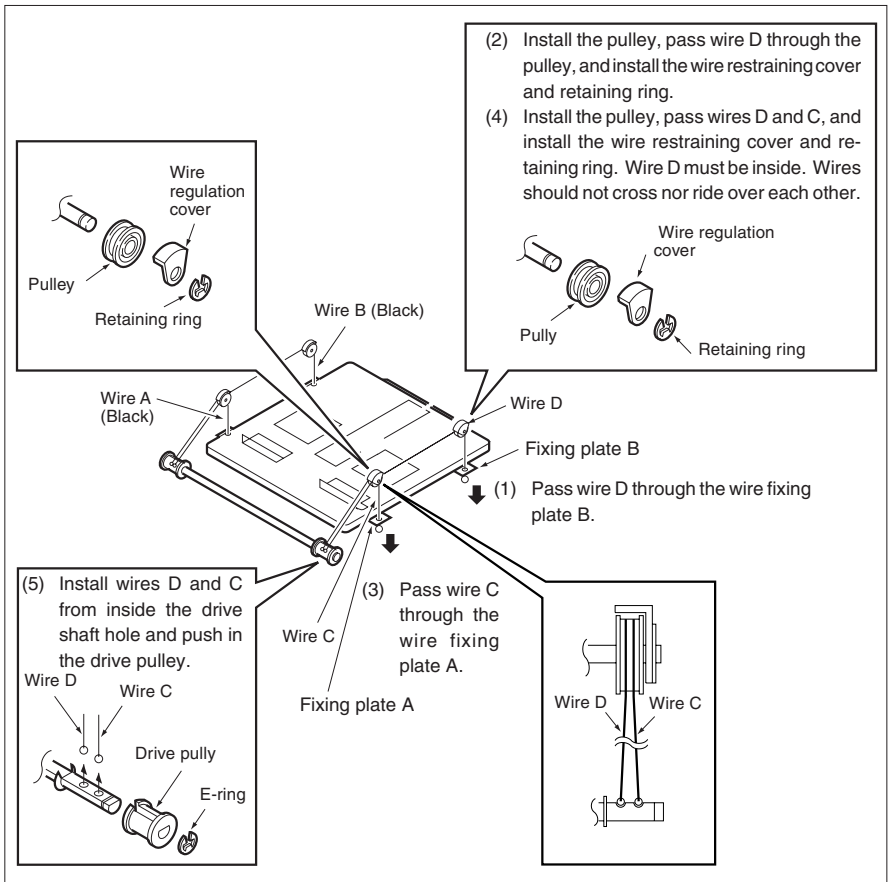
- (1) Remove the up/down unit.
- (2) Draw out paper feed tray 1/2.



<Wire Lengths>

Wire A, C: 207.5 ± 1 mmWire B, D: 497.5 ± 1 mm

<Installing Wires>



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TRAY 3 PAPER FEED UNIT

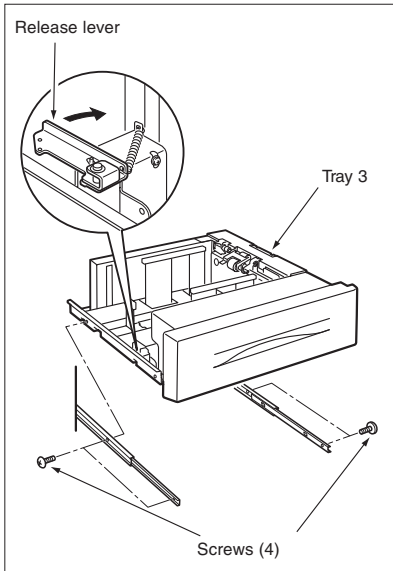
[1] Removing and Reinstalling the Paper Feed Tray 3

⚠Warning: When removing the tray, stand in a proper position so that you do not hurt your back and waist. If the tray contains paper, remove all paper before removing the tray.

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Open the front left and right doors.
- (2) While pressing the tray release lever (at the left) inward, draw out the tray.
- (3) Remove the four screws and remove the tray with it lifted.



- (4) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the Front Cover of Paper Tray 3

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

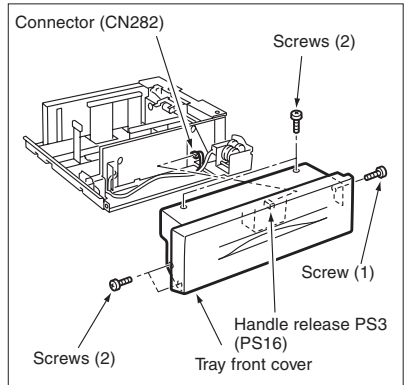
a. Procedure

- (1) Draw out paper feed tray 3.
- (2) Remove the five screws to remove the front cover of tray.

Caution: The front cover and main body of the tray are connected with a wiring harness of the handle release PS3 (PS16). Remove the tray front cover from the main body carefully so as not to break the wiring harness.

- (3) Disconnect the handle detection PS connector (CN282).

Caution: When reinstalling the front cover, connect the handle detection PS connector without fail. If you forget to connect it, you cannot draw out any tray.

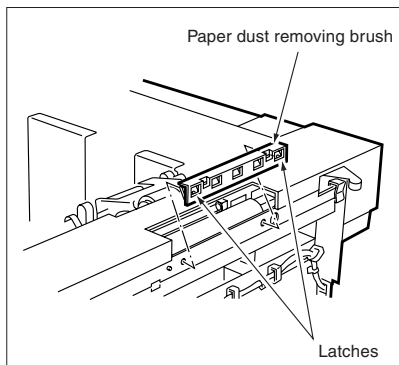


- (4) Reinstall the above parts following the removal steps in reverse.

[3] Cleaning the Paper Dust Removing Brush

a. Procedure

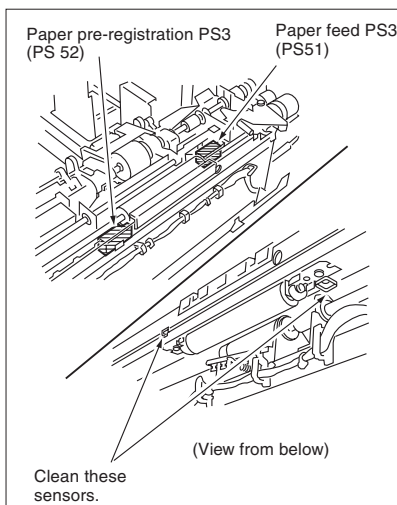
- (1) Draw out paper feed tray 3.
- (2) Release the two latches to detach the paper dust removing brush.
- (3) Clean the paper dust removing brush with the cleaning pad and blower brush.



[4] Cleaning the Paper Pre-registration PS/the Paper Feed PS

a. Procedure

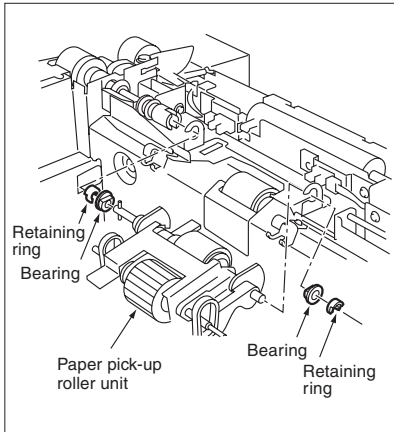
- (1) Draw out paper feed tray 3.
- (2) Clean the paper pre-registration PS3 (PS52)/the paper feed PS3 (PS51) with a blower brush.



[5] Removing and Reinstalling the Paper Feed Roller and the Feed Roller

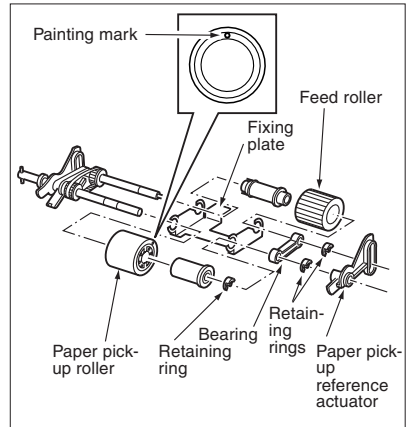
a. Procedure

- (1) Draw out tray 3.
- (2) Remove the two retaining rings and slide the two bearings outward to detach the paper feed roller unit.



- (3) Remove the following parts from the paper feed roller unit to remove individual rollers:

- Retaining rings (3)
- Bearing (1)
- Paper feed reference actuator
- Shafts (2)
- Fixing plate



- (4) Reinstall the above parts following the removal steps in reverse.

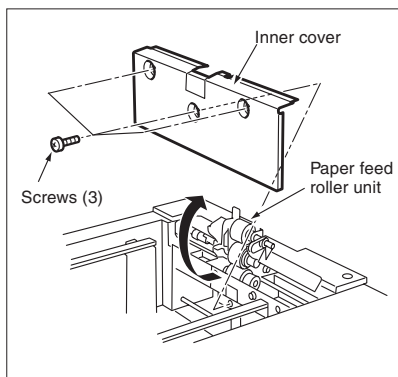
Caution 1: When reinstalling rollers, pay attention to their orientation.

Caution 2: Check whether grease or like remains on each roller. If it does, wipe it.

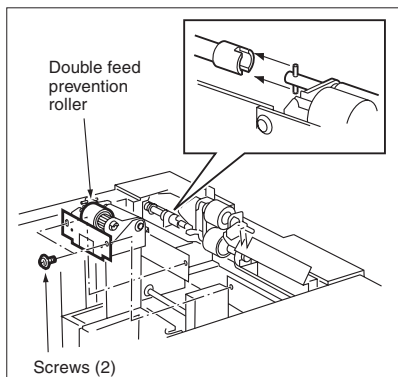
[6] Removing and Reinstalling the Double Feed Prevention Roller

a. Procedure

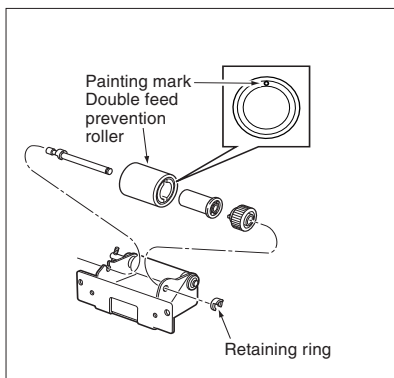
- (1) Draw out paper feed tray 3.
- (2) Raise the paper feed roller unit straight up.
- (3) Remove the three screws to detach the inner cover.



- (4) Remove the two screws to detach the double feed prevention roller unit.



- (5) Remove the retaining ring to detach the double feed prevention roller shaft with roller.
- (6) Slide the double feed prevention roller out of the shaft.



- (7) Reinstall the above parts following the removal steps in reverse.

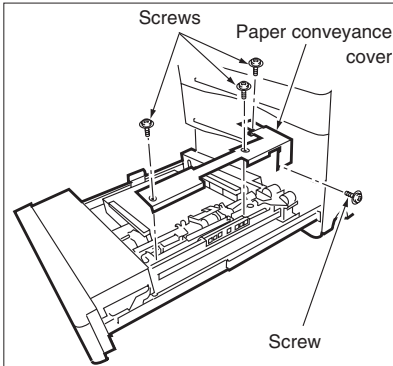
Caution 1. When reinstalling the roller, pay attention to its orientation.

Caution 2. Check whether grease or the like remains on double feed prevention roller. If it does wipe it.

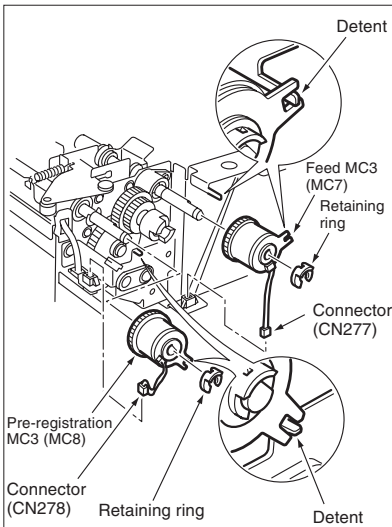
[7] Replacing the Pre-registration MC3 (MC8) and the Feed MC3 (MC7)

a. Procedure

- (1) Draw out paper tray 3.
- (2) Remove the four screws to detach the paper conveyance cover.



- (3) Disconnect the two connectors (CN278, CN277).
- (4) Remove the retaining ring to detach the pre-registration MC3 (MC8) and the feed MC3 (MC7).



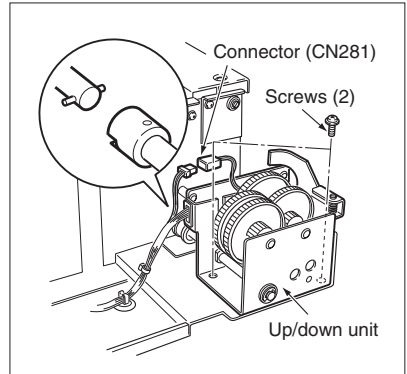
- (5) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling each MC, fit the detent in the slit in the MC.

[8] Removing and Reinstalling the Up/Down Unit

a. Procedure

- (1) Draw out paper feed tray 3.
- (2) Remove the front cover of the tray.
- (3) Disconnect the connector (CN281).
- (4) Remove the two screws to detach the up/down unit.



- (5) Reinstall the above parts following the removal steps in reverse.

[9] Replacing the Up/Down Plate Wires

Caution 1: This section explains how to replace the rear wires. To replace the front wires, remove the front cover of tray and paper up/down unit. The replacement procedure is the same as that for the rear wires.

Caution 2: When replacement or reinstallation of the wires is complete, check whether the up/down plate moves up and down smoothly by rotating the up/down plate drive pulley by hand.

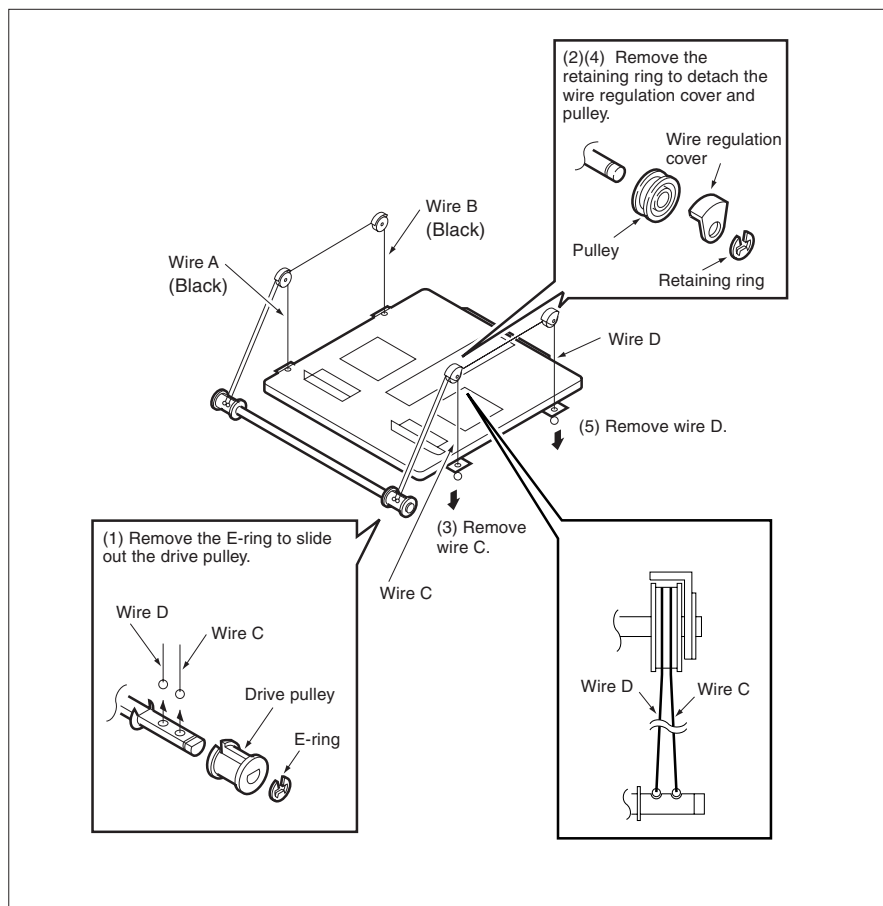
Caution 3: Be sure to install wires so that they do not cross nor ride over each other.

Caution 4: After installing the wires, adjust inclination of the up/down plate.

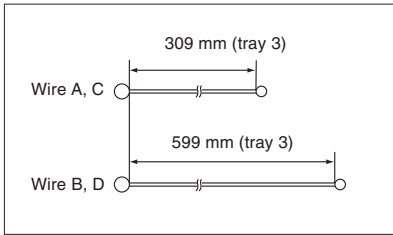
<Wire Lengths>

<Removing wires>

- (1) Remove the up/down unit.
- (2) Draw out paper feed tray 3.

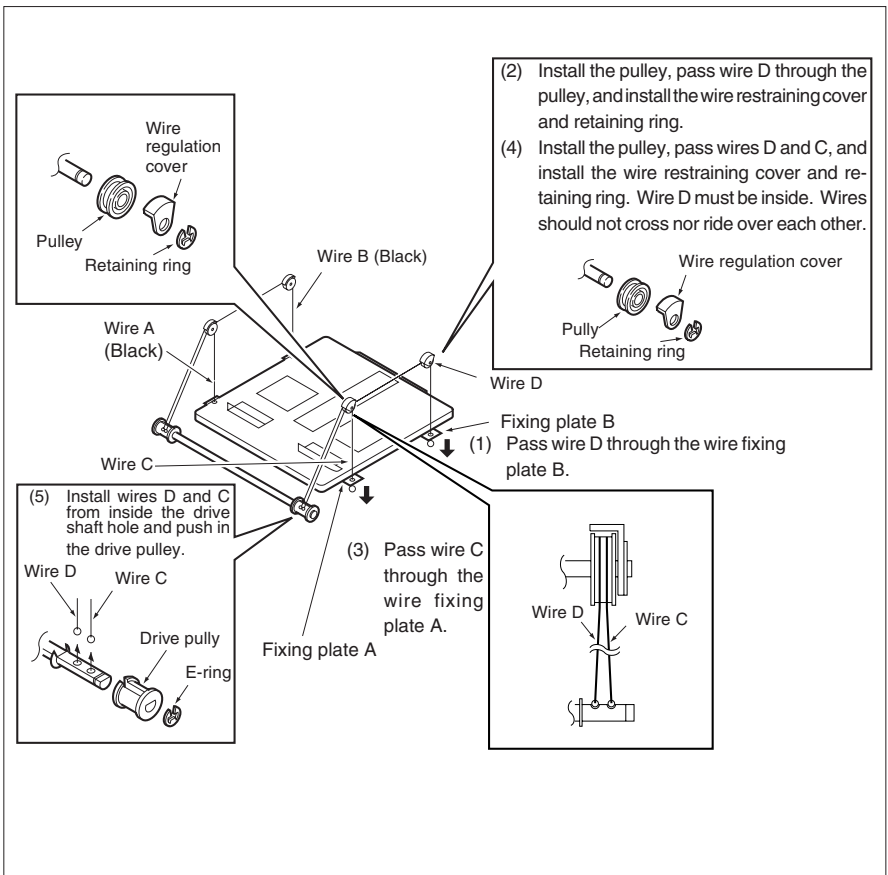


<Wire Lengths>



Wire A, C: 309±1 mm
Wire B, D: 599±1 mm

<Installing Wires>



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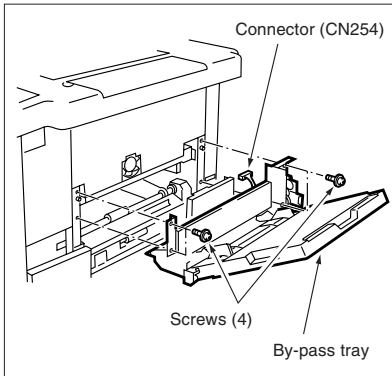
BY-PASS TRAY

[1] Removing and Reinstalling the By-pass Tray

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the right side cover (upper). (See "EXTERNAL SECTION.")
- (2) Disconnect the connector (CN254).
- (3) Remove the four screws to remove the by-pass tray.

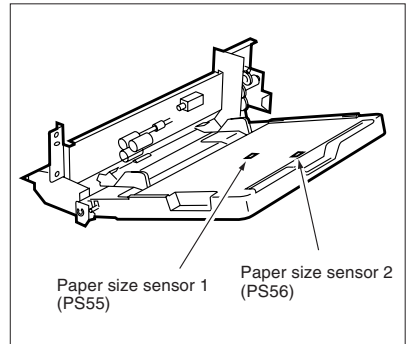


- (4) Reinstall the above parts following the removal steps in reverse.

[2] Cleaning the Paper Size Detection Sensors

a. Procedure

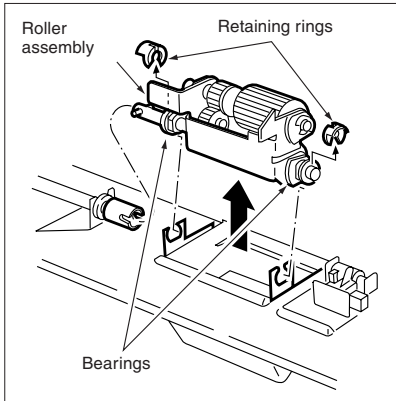
- (1) Open the bypass tray.
- (2) Clean the two paper size sensors (PS55, PS56) with a blower brush.



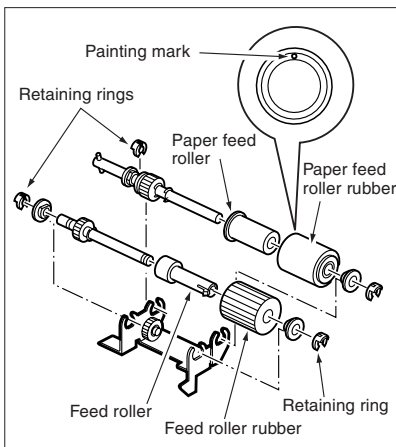
[3] Replacing the Paper Feed Roller/the Feed Roller Rubbers

a. Procedure

- (1) Remove the by-pass tray.
- (2) Remove the two retaining rings and slide the two bearings outward to remove the roller assembly.



- (3) Remove the three retaining rings from the roller subassembly to remove rollers.



- (4) Reinstall the above parts following the removal steps in reverse.

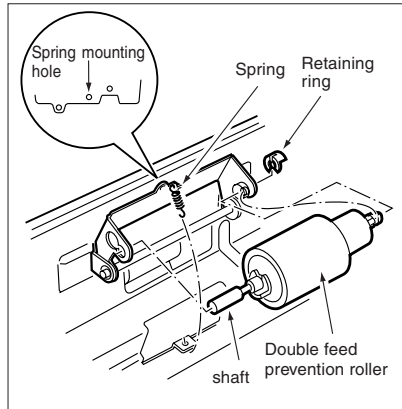
Caution: When reinstalling the rollers, pay attention to their orientation and position.

[4] Replacing the Double Feed Prevention Roller Rubber

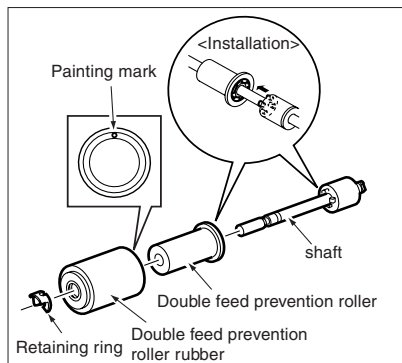
a. Procedure

- (1) Remove the by-pass tray and place the tray upside down.
- (2) Remove the spring and retaining ring to remove the double feed prevention roller together with the shaft.

Caution: There are three spring mounting holes. Engage the spring with the hole at the center.



- (3) Remove the retaining ring to pull the double feed prevention roller from the shaft.



- (4) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling the roller, pay attention to its orientation.

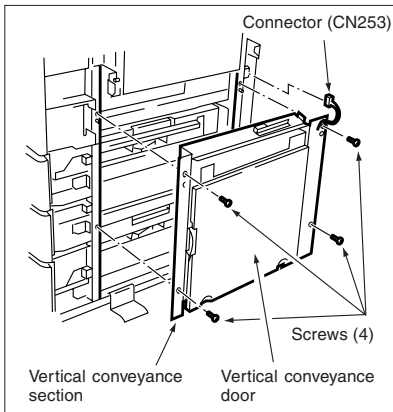
VERTICAL CONVEYANCE SECTION

[1] Removing and Reinstalling the Vertical Conveyance Section

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the right side cover (lower). (See "EXTERNAL SECTION.")
- (2) Disconnect the connector (CN253).
- (3) Remove the four screws to remove the vertical conveyance section.



- (4) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the vertical conveyance section, secure the section by four screws with its door closed.

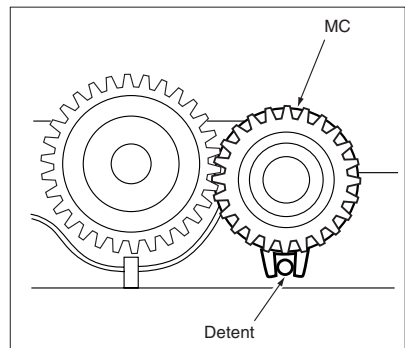
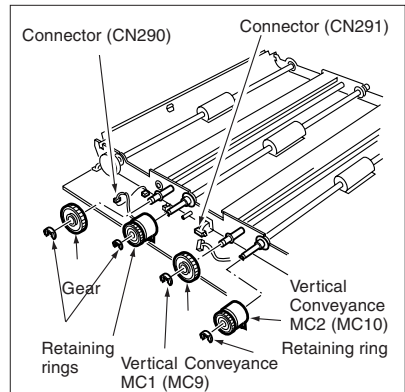
[2] Removing and Reinstalling the Vertical Conveyance MC (MC9, MC10)

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the vertical conveyance section.
- (2) Remove two retaining rings to detach two gears.
- (3) Disconnect the two connectors (CN290, CN291) to remove the wiring harness from the wiring harness guide.
- (4) Remove the two retaining rings to detach clutches.

Caution: When reinstalling the vertical conveyance MCs clutches, be sure to fit the detent in the slit in the clutch.



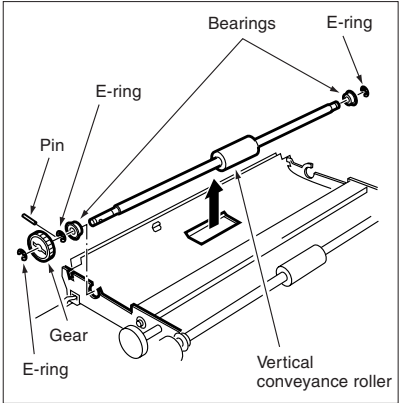
- (5) Reinstall the above parts following the removal steps in reverse.

[3] Replacing the Vertical Conveyance Roller (Upper)

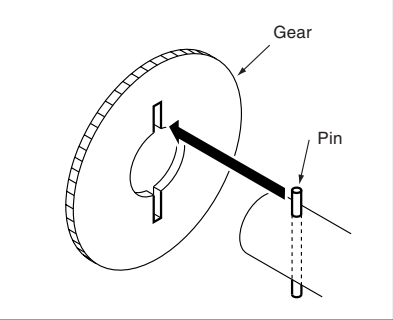
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the vertical conveyance section.
- (2) Remove the E-ring to remove the gear and pin.
- (3) Remove the two E-rings to move the bearing outward.
- (4) Remove the vertical conveyance roller (upper).



Caution: Install the gear with the shaft pin fit into the groove at the back of the gear.



- (5) Reinstall the above parts following the removal steps in reverse.

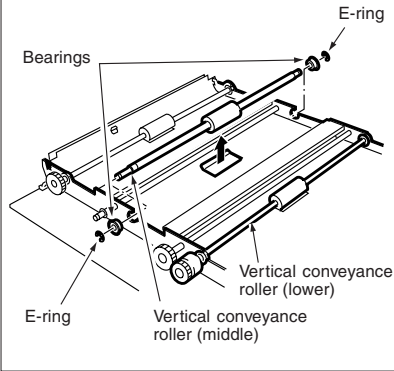
[4] Removing and Reinstalling the Vertical Conveyance Rollers (Middle/Lower)

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the vertical conveyance section.
- (2) Remove vertical MCs 9 and 10.
- (3) Remove the two E-rings to move the bearing.
- (4) Remove the vertical conveyance rollers (middle/lower) together with the shaft.

Caution: This illustration shows how to remove the vertical conveyance roller (middle). Remove the vertical conveyance roller (lower) in the same manner.



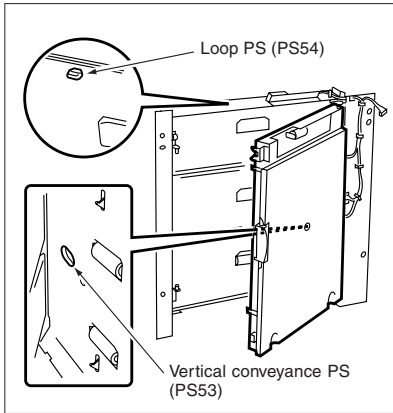
- (5) Reinstall the above parts following the removal steps in reverse.

[5] Cleaning the Vertical Conveyance PS/Loop PS

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Remove the vertical conveyance unit.
- (2) Clean the vertical conveyance PS (PS53) and loop PS (PS54) using a blower brush.



- (3) Reinstall the above parts following the removal steps in reverse.

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ADU UNIT

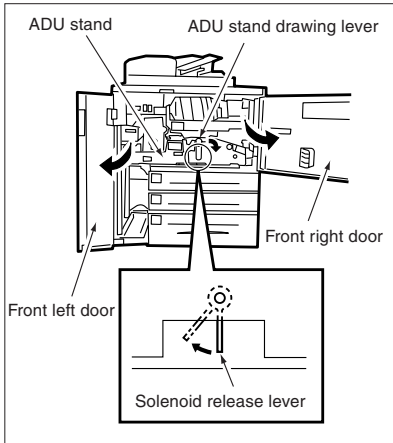
[1] Drawing out and Reinstalling the Adu Stand

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the Adu stand drawn out.

a. Procedure

- (1) Open the front right and left doors.
- (2) With the solenoid release lever under the Adu stand pushed to the left, turn down the Adu drawing lever to the right.
- (3) Gripping the Adu stand drawing lever, draw out the Adu stand.



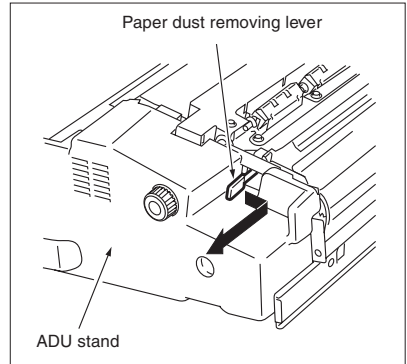
- (4) To reinstall the Adu stand, push in the Adu stand and then turn the Adu stand drawing lever upright.

[2] Cleaning the Paper Dust Removing Brush for Registration Roller

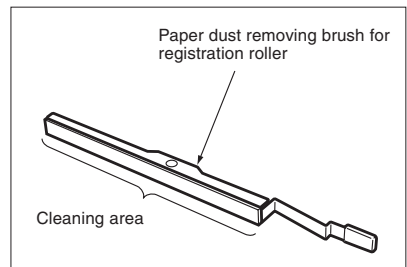
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

a. Procedure

- (1) Draw out the Adu stand from the main body.
- (2) Slide the paper dust removing lever to the right, then pull it out to detach the paper dust removing brush.



- (3) Using a blower brush, clean the paper dust removing brush for the registration roller.



- (4) Reinstall the above parts following the removal steps in reverse.

[3] Cleaning the Paper Dust Removing Brushes for the Registration Roller

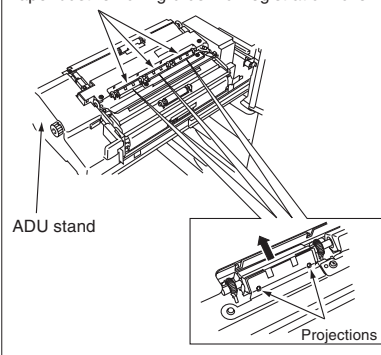
⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

a. Procedure

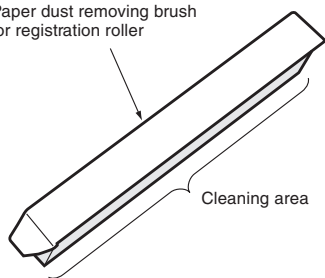
- (1) Draw out the ADU stand from the main body.
- (2) Press the projections (two for each brush) to release the paper dust removing three brushes for registration roller, then detach them.

Paper dust removing brush for registration roller



- (3) Clean the paper dust removing brushes for registration roller using a blower brush.

Paper dust removing brush for registration roller



- (4) Reinstall the above parts following the removal steps in reverse.

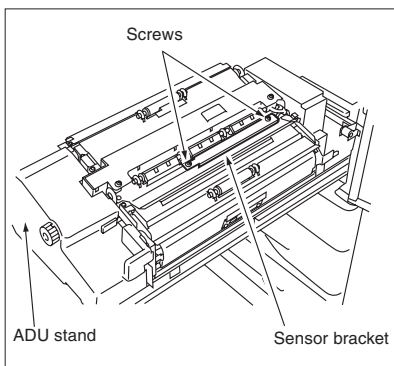
[4] Cleaning PS44 (Registration PS)

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

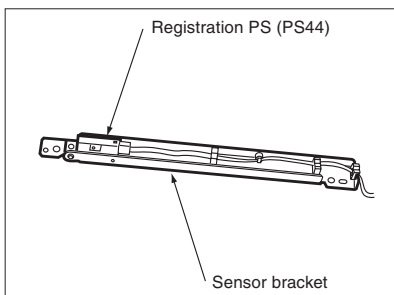
⚠Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Remove the two screws to release the sensor bracket.



- (3) Turn the sensor bracket upside down and clean registration PS (PS44) with a drum cleaner or cleaning pad.



- (4) Reinstall the above parts following the removal steps in reverse.

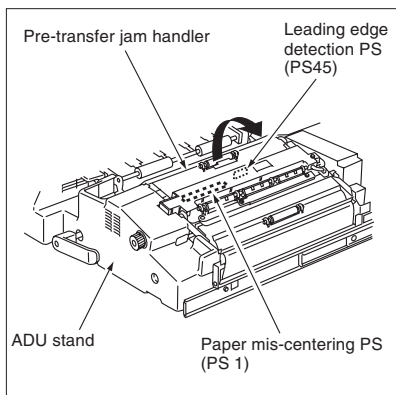
[5] Cleaning Paper Mis-centering PS (PS1)/Leading Edge Detection PS (PS45)

⚠ **Caution:** Be sure the power cord has been unplugged from the wall outlet.

⚠ **Warning:** The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Open the pre-transfer jam handler. Clean paper mis-centering PS (PS1) and leading edge detection PS (PS45) at the rear of the pre-transfer jam handler using a drum cleaner or cleaning pad.



- (3) Reinstall the above parts following the removal steps in reverse.

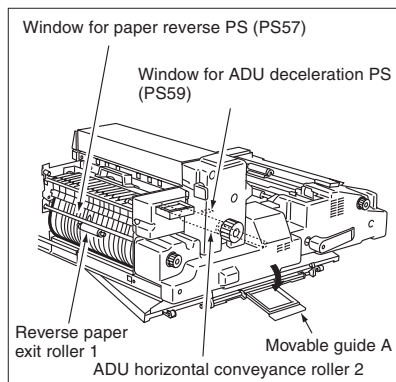
[6] Cleaning Paper Reverse PS (PS57)/ADU Deceleration PS (PS59)

⚠ **Caution:** Be sure the power cord has been unplugged from the wall outlet.

⚠ **Warning:** The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Using a blower brush, clean the paper reverse PS (PS57) through the sensor window at the top of paper reverse paper exit roller 1.
- (3) Open the ADU conveyance unit guide A.
- (4) Using a drum cleaner or cleaning pad, clean the ADU deceleration PS (PS59) through the sensor window at the right of ADU horizontal conveyance roller 2.



- (5) Reinstall the above parts following the removal steps in reverse.

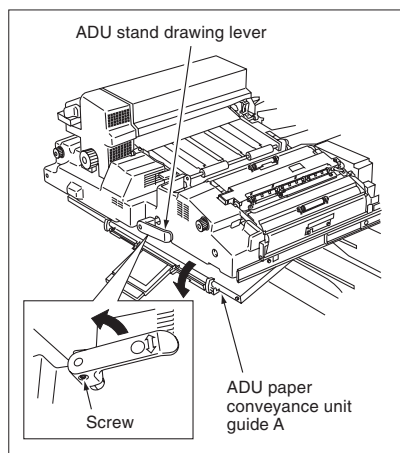
[7] Removing and Reinstalling the ADU Cover

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

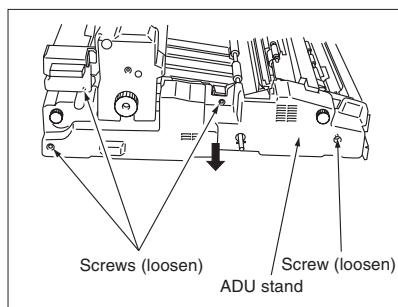
⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Open the ADU paper conveyance unit guide A.
- (3) Remove the screw to remove the ADU stand drawing lever.



- (4) Loosen the four screws to detach the ADU cover.



- (5) Reinstall the above parts following the removal steps in reverse.

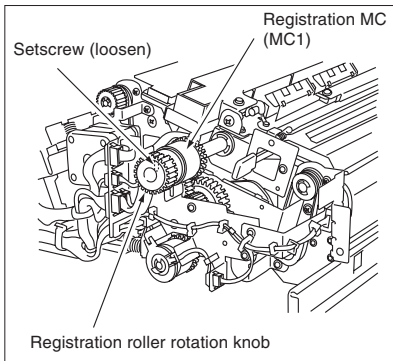
[8] Removing and Reinstalling Registration MC (MC1)

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

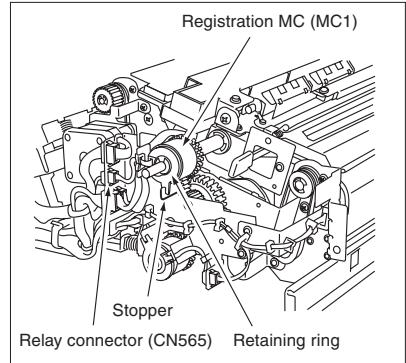
a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Detach the ADU cover.
- (3) Loosen the setscrew to remove the registration roller rotation knob.



- (5) Remove the retaining ring to detach registration MC (MC1).

Caution: When reinstalling MC1, pay attention to the position of the stopper.



- (6) Reinstall the above parts following the removal steps in reverse.

- (4) Disconnect the relay connector (CN565).

Caution: Each relay connector consists of two plugs and one socket. Be sure to remove only one plug (shown below) of the CN565 connector.

[9] Removing and Reinstalling ADU Pre-registration MC (MC2)

⚠ **Caution:** Be sure the power cord has been unplugged from the wall outlet.

⚠ **Warning:** The interlock which is turned off when the front right or left door opens/closes, should never been turned on forcibly with the ADU stand drawn out.

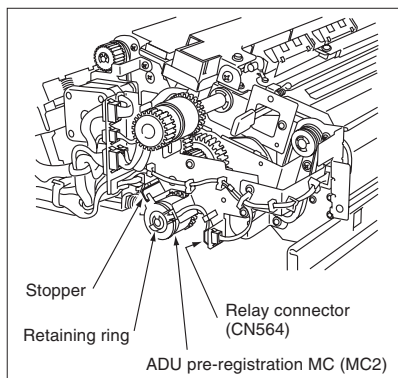
a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Detach the ADU cover.
- (3) Disconnect the relay connector (CN564).

Caution: Each relay connector consists of two plugs and one socket. Be sure to remove only one plug (shown below) of the CN564 connector.

- (4) Remove the retaining ring to detach ADU pre-registration MC (MC2).

Caution: When reinstalling MC2, pay attention to the position of the stopper.



- (6) Reinstall the above parts following the removal steps in reverse.

[10] Removing and Reinstalling the Second Paper Feed Unit

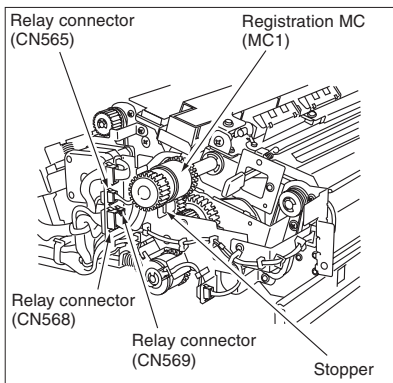
⚠ **Caution:** Be sure the power cord has been unplugged from the wall outlet.

⚠ **Warning:** The interlock which is turned off when the front right or left door opens/closes, should never been turned on forcibly with the ADU stand drawn out.

a. Procedure

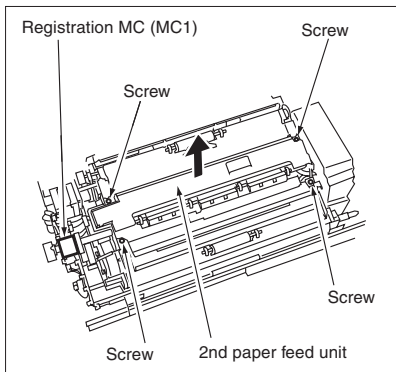
- (1) Draw out the ADU stand from the main body.
- (2) Detach the ADU cover.
- (3) Disconnect the three relay connectors (CN565, 568, 569).

Caution: Each relay connector consists of two plugs and one socket. Be sure to remove only one plug (shown below) of each connector.



- (4) Remove the four screws to remove the second paper feed unit.

Caution: When reinstalling the second paper feed unit, pay attention to the position of the stopper of second paper feed MC (MC1).



- (5) Reinstall the above parts following the removal steps in reverse.

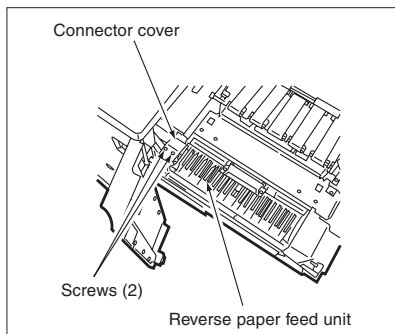
[11] Removing and Reinstalling the ADU Stand

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning 1: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

⚠ Warning 2: Removal and reinstallation of the ADU stand belongs to the work of carrying a heavy load, so assistance of another worker is required.

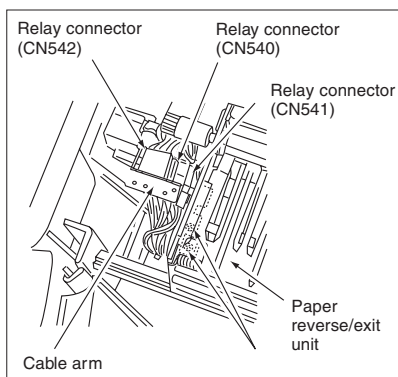
- (1) Draw out the ADU stand from the main body.
- (2) Remove the fixing unit. (See "FIXING UNIT.")
- (3) Remove the transfer/separation corona unit. (See "CORONA UNIT SECTION.")
- (4) Remove the second paper feed unit.
- (5) Remove the two screws to detach the connector cover.



- (6) Disconnect the three relay connectors (CN540, 541, 542).

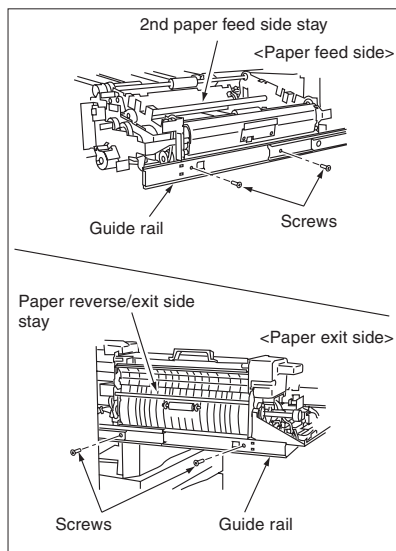
Caution: Each relay connector consists of two plugs and one socket. Be sure to remove only one plug (shown below) of each connector.

- (7) Remove the two screws to remove the cable arm from the ADU stand.



- (8) Remove the two screws securing the guide rail on the paper feed side and remove the two screws securing the guide rails on the paper exit side.
- (9) Remove the ADU stand upward with the second paper feed side stay held by one worker and the paper reverse/exit side stay held by the other worker.

⚠ Caution: Must avoid placing the ADU stand on a non flat place after the removal. If it is placed on a non flat place, its handle on the open/close guide A may be deformed.



- (10) Reinstall the above parts following the removal steps in reverse.

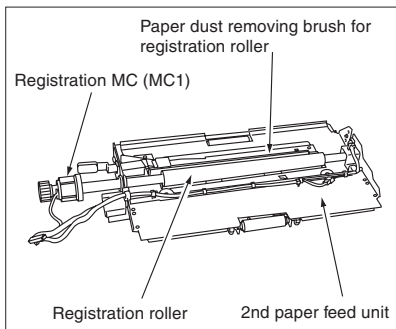
[12] Removing and Reinstalling the Registration Roller

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

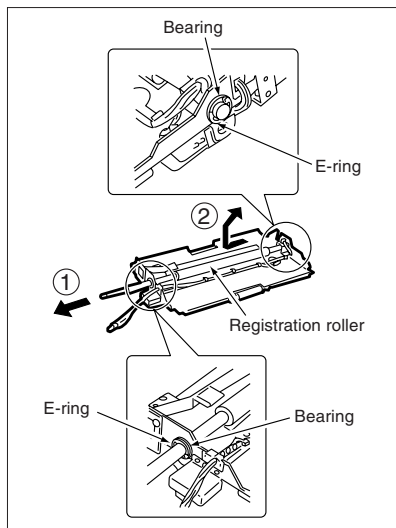
a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Remove the second paper feed unit.
- (3) Remove the paper dust removing brush for registration roller.
- (4) Remove the registration MC (MC1).



- (5) Remove the two E-rings (one at the left and the other at the right) and one bearing from the registration roller.

- (6) Slide the registration roller to the front, then remove it by lifting its rear end.



- (7) Reinstall the above parts following the removal steps in reverse.

[13] Removing and Reinstalling the Registration Motor (M12) Assembly

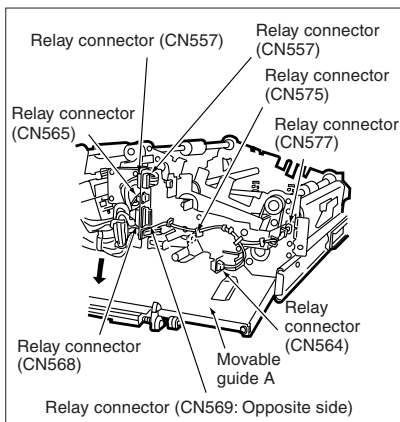
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never been turned on forcibly with the ADU stand drawn out.

a. Procedure

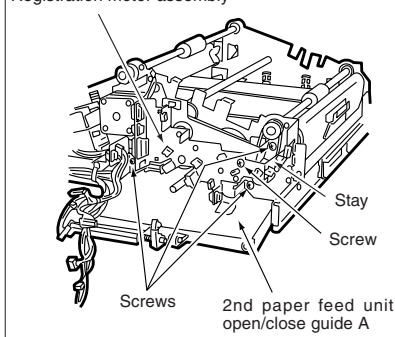
- (1) Draw out the ADU stand from the main body.
- (2) Remove the second paper feed unit. See [10] Removing and Reinstalling the Second Paper Feed Unit.
- (3) Remove ADU pre-registration MC (MC2).
- (4) Disconnect eight relay connectors (CN557, 564, 565, 568, 569, 575, 577).

Caution: Each relay connector consists of two plugs and one socket. For CN564, 565, 568, and 569, one plug of each relay connector has already been disconnected when removed the second paper feed unit. At this point, disconnect the other plug of these connectors. For CN557, remove two plugs. For CN575 and 577, disconnect one plug shown below.



- (5) Release the wiring harness from the registration motor assembly and stay.
- (6) Remove one screw to detach the stay.
- (7) Remove the three screws to detach the registration motor (M12) assembly.

Registration motor assembly



- (8) Reinstall the above parts following the removal steps in reverse.

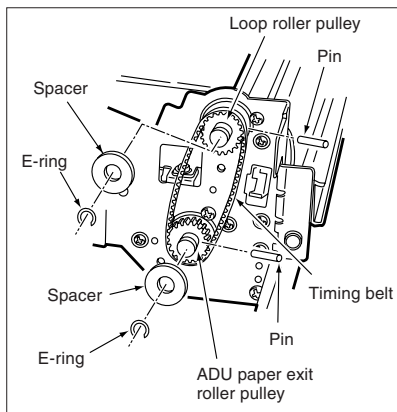
[14] Removing and Reinstalling the Loop Roller, ADU Paper Exit Roller, and Pre-registration Roller

⚠Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

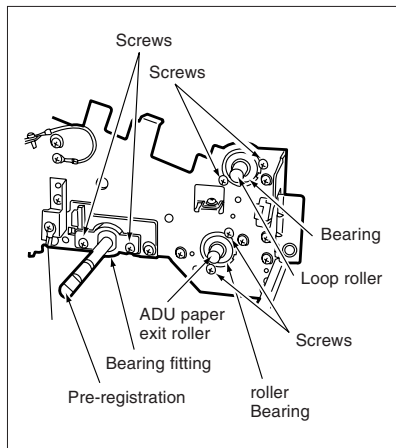
a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Remove the registration motor assembly. See [13] Removing and Reinstalling the Registration Motor (M12) Assembly.
- (3) Open the second paper feed unit open/close guide A.
- (4) Remove the E-ring and spacer from each gear.
- (5) Detach the timing belt.
- (6) Remove the loop roller pulley and pull the pin from the shaft.
- (7) Remove the ADU paper exit roller pulley and pull the pin from the shaft.

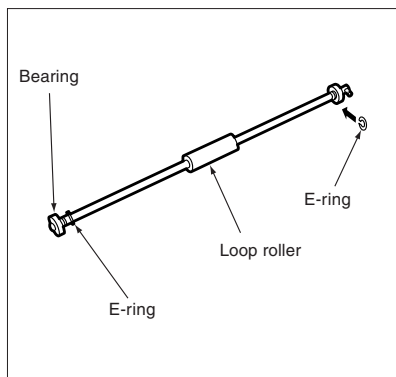


- (8) Remove the two screws to slide the loop roller and ADU paper exit roller bearings to the front.

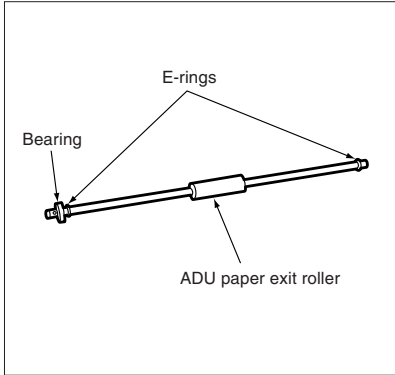
- (9) Remove the two screws to release the bearing fitting.
- (10) Pull out the loop roller, ADU paper exit roller, and pre-registration roller.



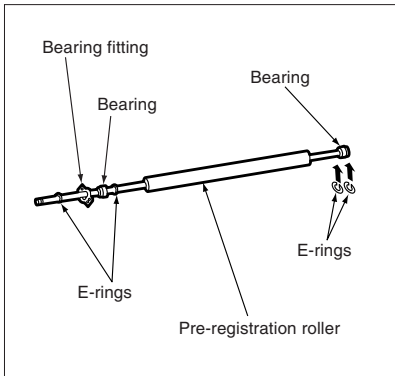
- (11) Remove the two E-rings and one bearing from the loop roller.



- (12) Remove the two E-rings and one bearing from the ADU paper exit roller.



- (13) Remove the four E-rings, two bearings and one bearing fitting from the pre-registration roller.



- (14) Reinstall the above parts following the removal steps in reverse.

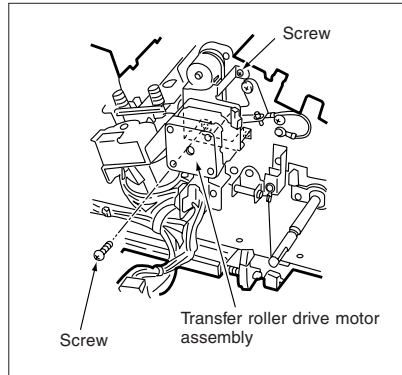
[15] Removing and Reinstalling the Pre-transfer Roller and Pre-registration Loop Roller

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

a. Procedure

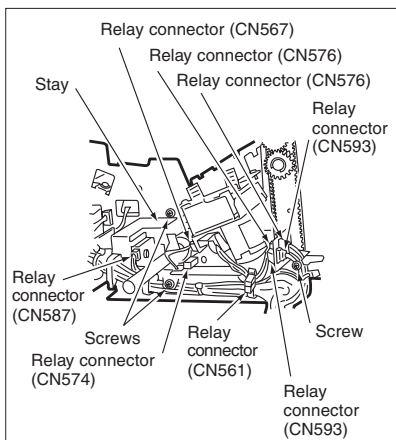
- (1) Draw out the ADU stand from the main body.
- (2) Remove the registration motor assembly. See [13] Removing and Reinstalling the Registration Motor (M12) Assembly.
- (3) Remove the two screws to detach the transfer roller drive motor (M9) assembly.



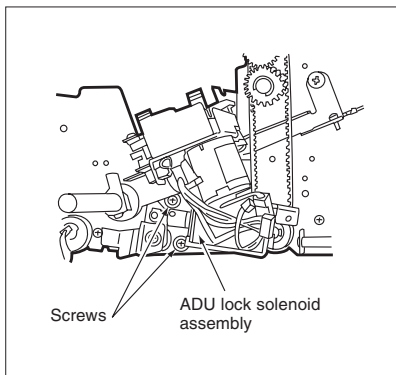
- (4) Disconnect eight relay connectors (CN561, 567, 574, 576, 587, 593).

Caution: Each relay connector (CN567, 574, 576, 593) consists of two plugs and one socket. For CN576 and 593, disconnect two plugs from each connector. For other connectors, disconnect one plug from each connector as shown below.

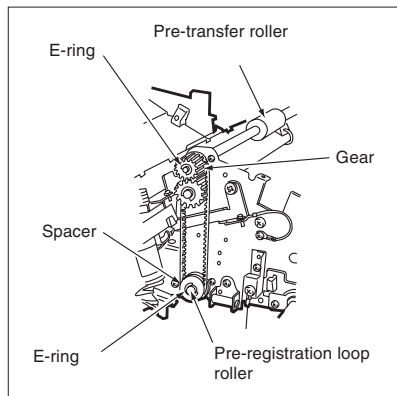
- (5) Release the wiring harness from the stay.
(6) Remove the three screws to detach the stay.



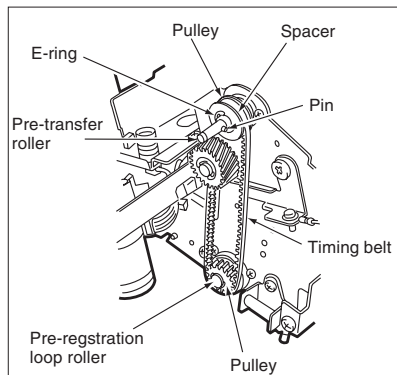
- (7) Remove the two screws to remove the ADU lock solenoid assembly.



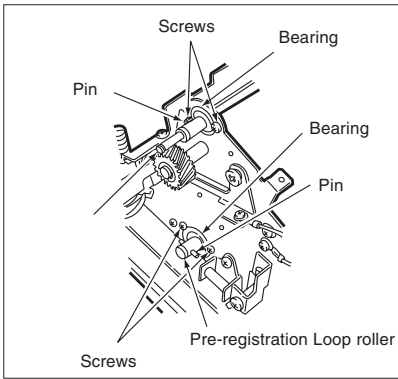
- (8) Remove one E-ring from the pre-transfer roller to detach the gear.
(9) Remove one E-ring from the pre-registration loop roller to detach one spacer.



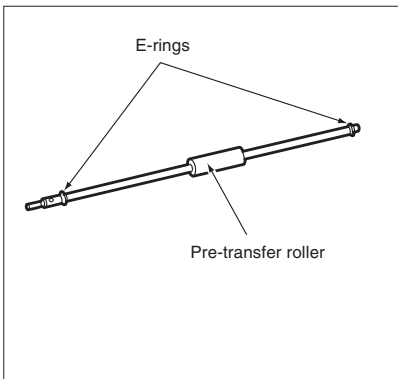
- (10) Remove one pin, one E-ring, and one spacer from the pre-transfer roller.
(11) Detach the timing belt.
(12) Remove the pre-transfer roller pulley and pre-registration loop roller pulley.



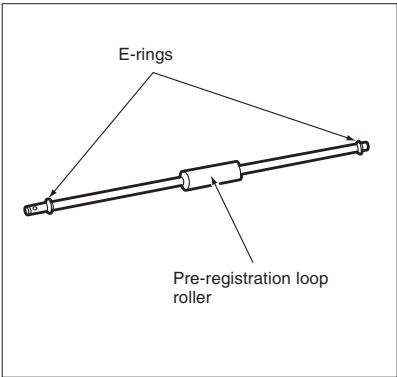
- (13) Pull one pin from each roller.
- (14) Remove the two screws to slide the pre-transfer roller bearing to the front, and remove the two screws to slide the pre-registration loop roller pulley to the front.
- (15) Slide the pre-transfer roller shaft toward the front side, and release the shaft's rear side first, then hold and pull out the shaft's front side by sliding its rear side upward.
- (16) Remove the pre-registration loop roller shaft by pulling it out from the mount bracket.



- (17) Remove the two E-rings from the pre-transfer roller.



- (18) Remove the two E-rings from the pre-registration loop roller.



- (19) Reinstall the above parts following the removal steps in reverse.

[16] Removing and Reinstalling the ADU Reverse Roller

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

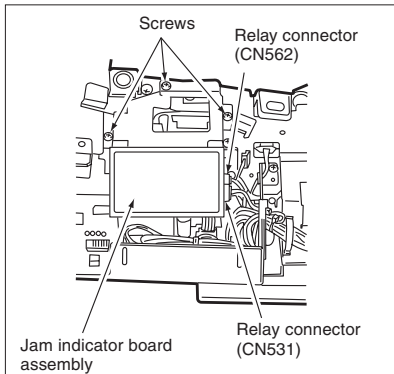
⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Disconnect the two relay connectors (CN531, 562).

Caution: Each relay connector consists of two plugs and one socket. Disconnect one plug from each connector as shown below.

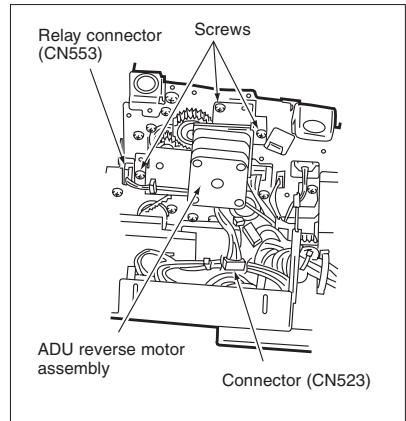
- (3) Remove the three screws to detach the jam indicator board assembly.



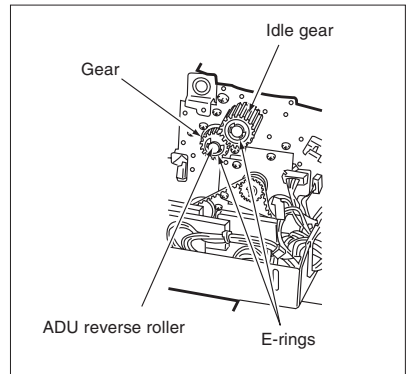
- (4) Disconnect one relay connector (CN553) and one connector (CN523).

Caution: The relay connector (CN553) consists of two plugs and one socket. Disconnect one plug shown below.

- (5) Remove the three screws to detach the ADU reverse motor (M7) assembly.

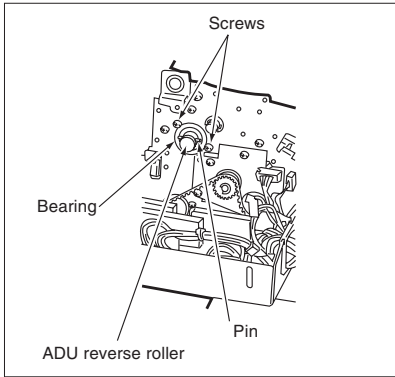


- (6) Remove one E-ring to detach the idle gear.
- (7) Remove one E-ring to detach the ADU reverse roller gear.

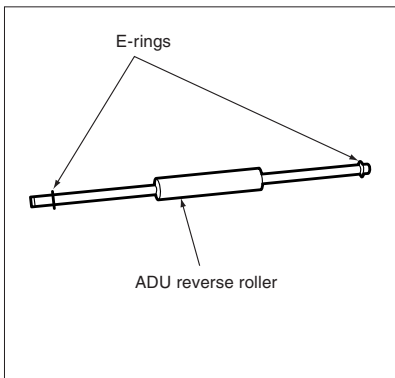


- (8) Pull the pin from the ADU reverse roller.
- (9) Remove the two screws and slide the bearing to remove it.

(10) Pull out the ADU reverse roller.



(11) Remove the two E-rings from the ADU reverse roller.



(12) Reinstall the above parts following the removal steps in reverse.

[17] Removing and Reinstalling the ADU Stand Drive Board Assembly

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

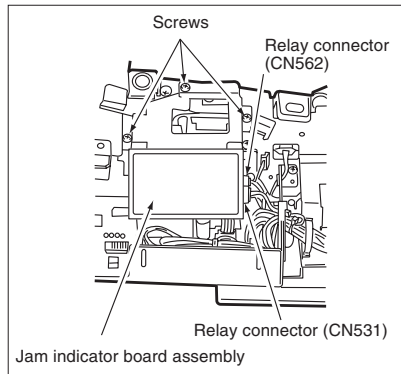
⚠ Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never been turned ON forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Disconnect the two relay connectors (CN531, 562).

Caution: Each relay connector consists of two plugs and one socket. Disconnect one plug from each connector as shown below.

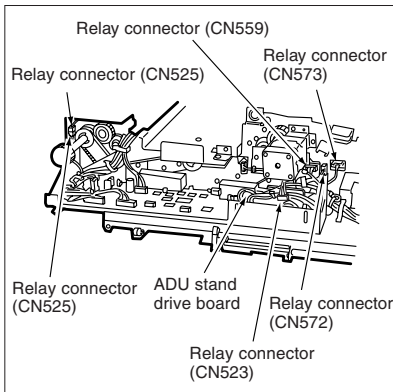
- (3) Remove the three screws to detach the jam indicator board assembly.



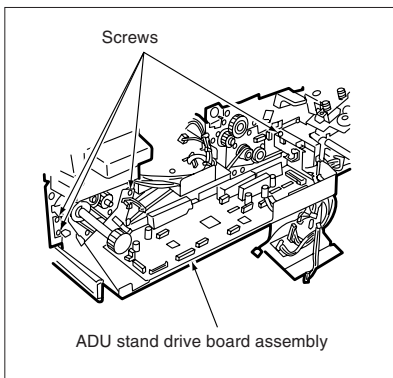
- (4) Disconnect the fire relay connectors (CN523, 525, 559, 572, 573) .

Caution: Each relay connector consists of two plugs and one socket. For CN525, disconnect two plugs. For other relay connectors, disconnect one plug from each connector as shown below.

- (5) Disconnect all the 11 connectors on the ADU stand drive board.



- (6) Release the wiring harness from the ADU stand drive board assembly.
- (7) Remove the four screws to detach the ADU stand drive board assembly.



- (8) Reinstall the above parts following the removal steps in reverse.

[18] Removing and Reinstalling the ADU Horizontal Conveyance Rollers 1 and 2

Caution: Be sure the power cord has been unplugged from the wall outlet.

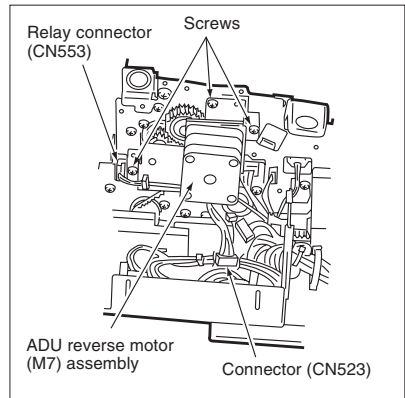
Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Remove the ADU stand drive board assembly.
- (3) Disconnect relay connector (CN553) and connector (CN523).

Caution: The relay connector (CN553) consists of two plugs and one socket. Disconnect one plug shown below.

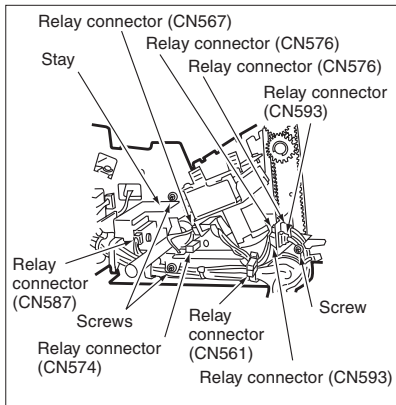
- (4) Remove the three screws to detach the ADU reverse motor (M7) assembly.



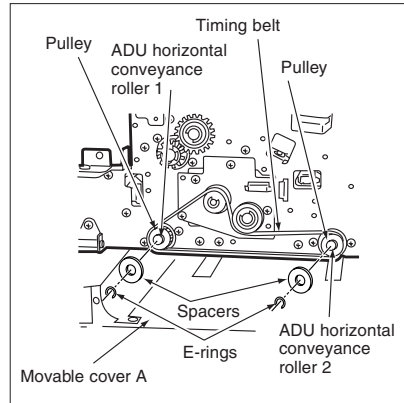
- (5) Disconnect eight relay connectors (CN561, 567, 574, 576, 587, 593).

Caution: Each relay connector (CN567, 574, 576, 593) consists of two plugs and one socket. For CN576 and 593, disconnect two plugs from each connector. For other connectors, disconnect one plug from each connector as shown below.

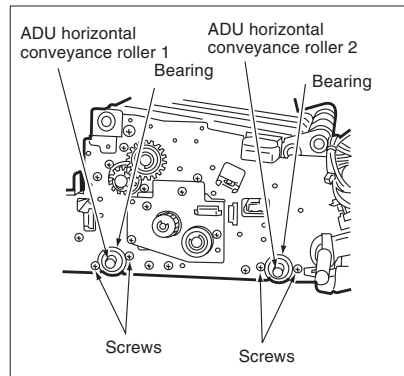
- (6) Release the wiring harness from the stay.
(7) Remove the three screws to detach the stay.



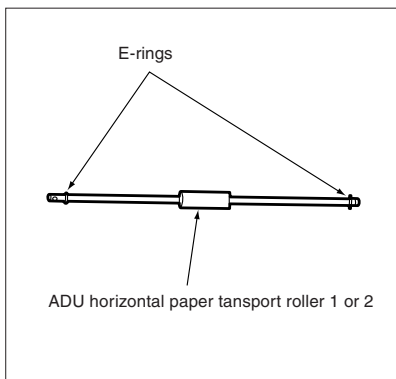
- (8) Open ADU horizontal conveyance unit open/close cover A.
(9) Remove one E-ring and one spacer from each of ADU horizontal conveyance rollers 1 and 2.
(10) Detach the timing belt.
(11) Remove pulley from each of ADU horizontal conveyance rollers 1 and 2.



- (12) Remove the two screws and slide each bearing forward to remove it.
(13) Pull out each roller.



- (14) Remove the two E-rings from each roller.



- (15) Reinstall the above parts following the removal steps in reverse.

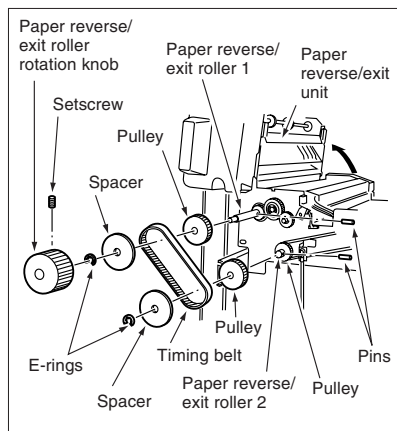
[19] Removing and Reinstalling the Paper Reverse/Exit Rollers 1, 2, and 3

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

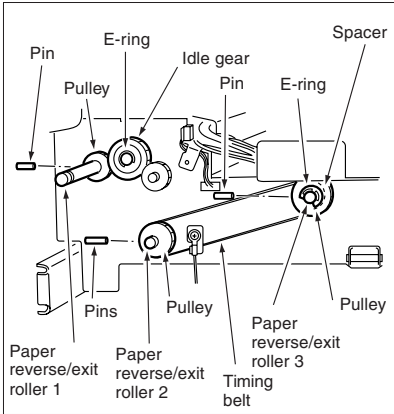
⚠ Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

a. Procedure

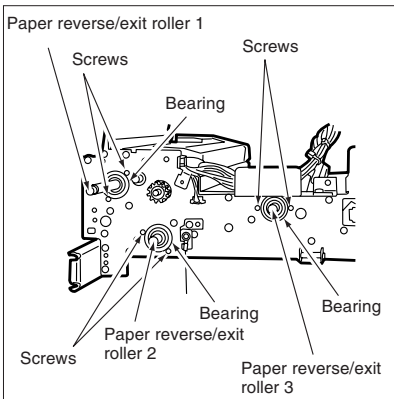
- (1) Draw out the ADU stand from the main body.
- (2) Remove the ADU stand drive board assembly.
- (3) Open the paper reverse/exit unit.
- (4) Loosen one setscrew to detach the reverse paper exit roller rotation knob.
- (5) Remove one E-ring and one spacer from each of paper reverse/exit rollers 1 and 2.
- (6) Detach the timing belt.
- (7) Remove one pulley from each roller.
- (8) Pull one pin out of each roller.



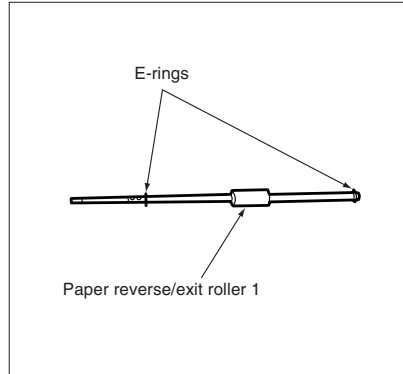
- (9) Remove one E-ring to detach the idle gear.
- (10) Remove one gear from paper reverse/exit roller 1 and remove one pin.
- (11) Remove one E-ring from paper reverse/exit roller 3 and remove one spacer.
- (12) Detach the timing belt.
- (13) Remove one pulley from each of paper reverse/exit rollers 2 and 3 and remove one pin.



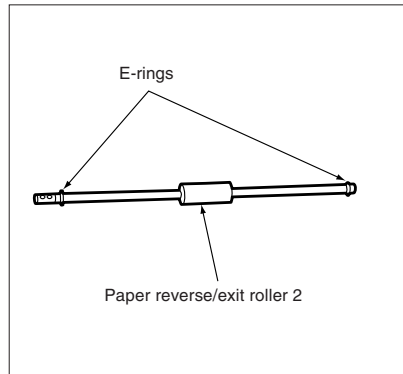
- (14) Remove two screws and slide the bearing to the front to remove it.
- (15) Pull out each roller.



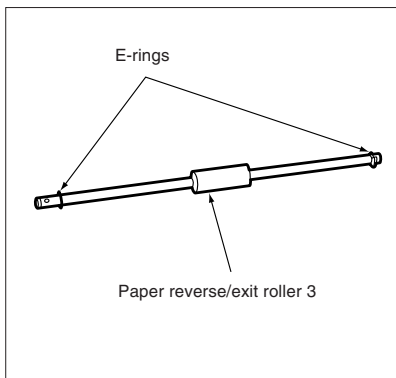
- (16) Remove the two E-rings from paper reverse/exit roller 1.



- (17) Remove the two E-rings from paper reverse/exit roller 2.



- (18) Remove the two E-rings from paper reverse/exit roller 3.



- (19) Reinstall the above parts following the removal steps in reverse.

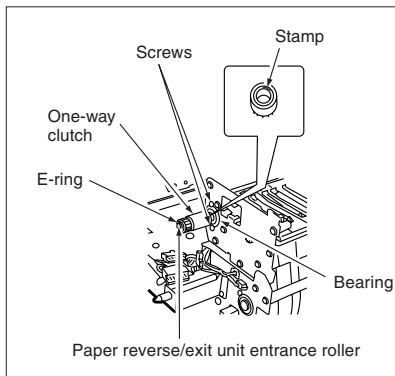
[20] Removing and Reinstalling the Paper Reverse/Exit Unit Entrance Roller

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

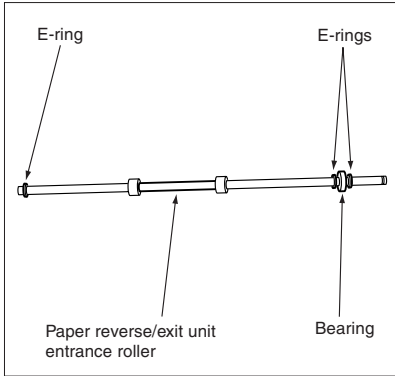
⚠ Warning: The interlock which is turned off when the front right or left door opens/closes, should never be turned on forcibly with the ADU stand drawn out.

a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Hold the paper reverse/exit unit down toward left.
- (3) Remove one E-ring to detach the one-way clutch.
Caution: When reinstalling the one-way clutch, pay attention to the marking.
- (4) Remove the two screws to slide one bearing to the rear side.
- (5) Pull out the paper reverse/exit unit entrance roller.



- (6) Remove the three E-rings and one bearing from the paper reverse/exit unit entrance roller.



- (7) Reinstall the above parts following the removal steps in reverse.

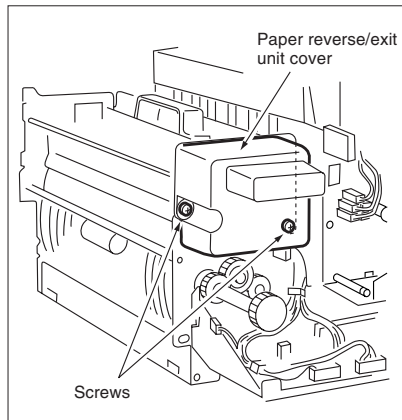
[21] Removing and Reinstalling the Paper Reverse/Exit Switchover Gate

⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

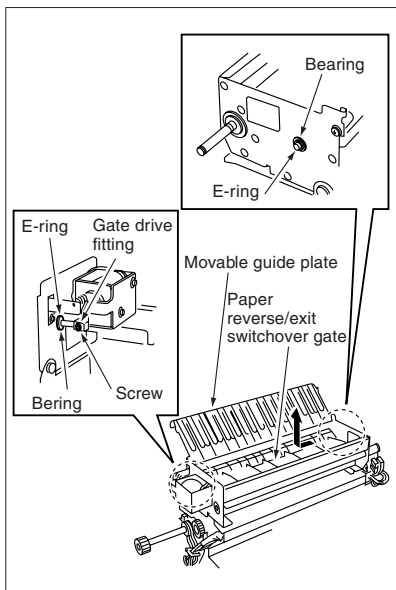
a. Procedure

- (1) Draw out the ADU stand from the main body.
- (2) Remove the two screws to detach the paper reverse/exit unit cover.



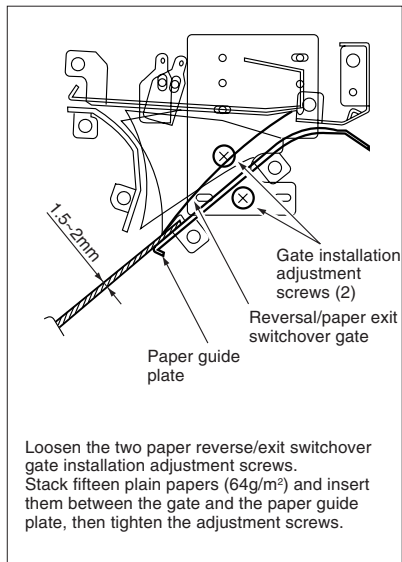
- (3) Remove one screw to release the gate drive fitting.
- (4) Remove each E-ring and bearing from the front and rear.

- (5) Open the jam access guide plate to remove the paper reverse/exit switchover gate.



- (6) Reinstall the above parts following the removal steps in reverse.

Caution: When installing the paper reverse/exit switchover gate, must perform the following adjustment.



[22] Removing and Reinstalling the Paper Exit Roller

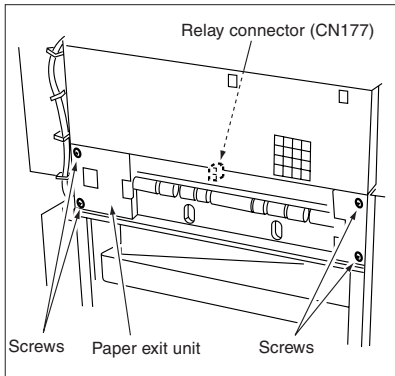
⚠ Caution: Be sure the power cord has been unplugged from the wall outlet.

⚠ Warning: The interlock which is turned OFF when the front right or left door opens/closes, should never be turned ON forcibly with the ADU stand drawn out.

a. Procedure

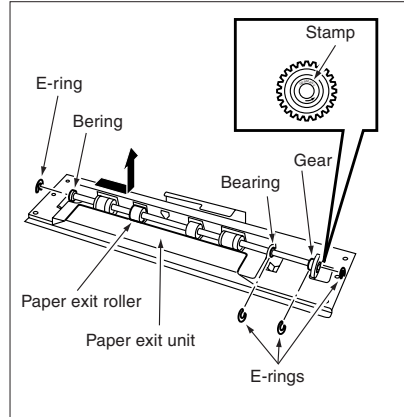
- (1) Remove the left side cover. (See "EXTERNAL SECTION.")
- (2) Draw out the ADU stand from the main body.
- (3) Remove the four screws to detach the paper exit unit.
- (4) Disconnect one relay connector (C177) in the paper exit unit.

Caution: Each relay connector consists of two plugs and one socket. For CN177, disconnect only the plug shown below.



- (5) Remove one E-ring to detach the gear.
Caution: When installing the gear, pay attention to the orientation of the marking on the gear.
- (6) Remove the three E-rings to detach the left bearing and right bearing.

- (7) Remove the paper exit roller from the paper exit unit.



- (8) Reinstall the above parts following the removal steps in reverse.

FIXING UNIT

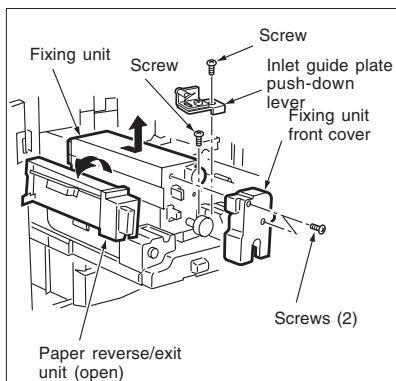
[1] Removing and Reinstalling the Fixing Unit

⚠ Caution 1: Be sure the power cord has been unplugged from the wall outlet.

⚠ Caution 2: Do not touch the fixing unit immediately after turning OFF the main switch because it is very hot and you may suffer burns. Wait until the fixing unit has cooled down sufficiently before working on it.

a. Procedure

- (1) Draw out the ADU stand. (See "ADU UNIT.")
- (2) Remove the two screws to detach the fixing unit front cover.
- (3) Open the paper reverse/exit unit.
- (4) Remove one screw to detach the inlet guide plate push-down lever.
- (5) Remove one screw to draw out the fixing unit. Then, remove it upward.



- (6) Reinstall the above parts following the removal steps in reverse.

[2] Removing and Reinstalling the Fixing Unit Top Cover

⚠ Caution: Before opening the fixing unit top cover, be sure to rotate the pressure release shaft clockwise to release the lower roller.

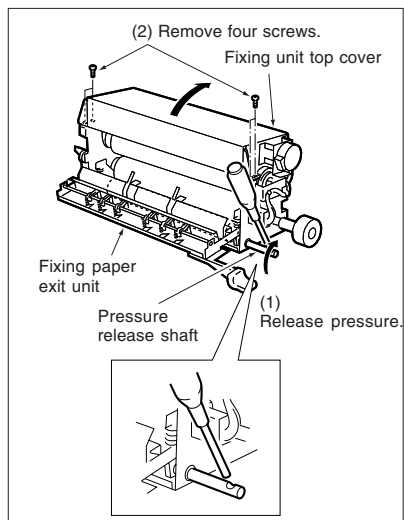
After closing the fixing unit top cover, be sure to rotate the pressure release shaft counter-clockwise to apply pressure to the lower roller.

a. Procedure

- (1) Draw out the ADU stand. (See "ADU UNIT.")
- (2) Insert a screwdriver or the like in the hole in the pressure release shaft and rotate the pressure release shaft to release pressure.

Caution: Perform pressure release with the fixing unit top cover closed.

- (3) Remove the four screws to open the fixing unit top cover.



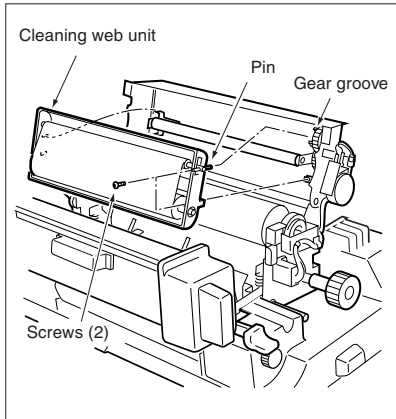
- (4) Close the fixing unit top cover following the opening steps in reverse.

Caution: When the fixing unit top cover has been closed and secured with the four screws, pressure must be applied to it without fail.

[3] Replacing the Cleaning Web

a. Procedure

- (1) Draw out the ADU stand. (See "ADU UNIT.")
- (2) Open the fixing unit top cover.
- (3) Remove the two screws to detach the cleaning web unit.



- (4) Reinstall the above parts following the removal steps in reverse.

Caution 1: When installing the cleaning web, align the groove in the take-up gear with the shaft pin on the unit, keeping its tension.

Caution 2: After replacing the cleaning web, make sure to reset the count value of the fixing unit cleaning web by "Copy Count by Parts to be Replaced (Fixed Parts)" in the 25 mode.

[4] Replacing the Fixing Heater Lamps (Upper/Roller) (L2, L3)

⚠ Caution: Do not touch the fixing heater lamp with bare hands.

Caution 1: Install the heater lamp with the maker mark indication side facing front.

Caution 2: The heater lamp should not touch the inner surface of the upper roller.

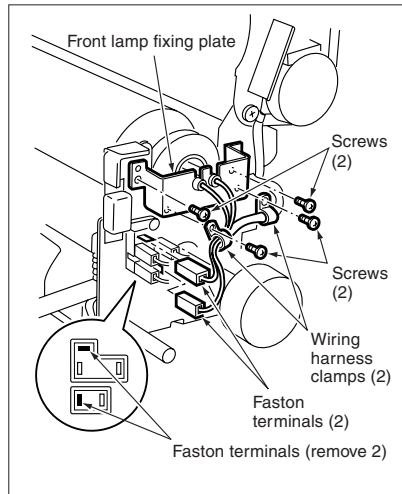
Caution 3: When replacing a heater lamp, be sure to insert the lamp end in the lamp terminal securely.

a. Procedure

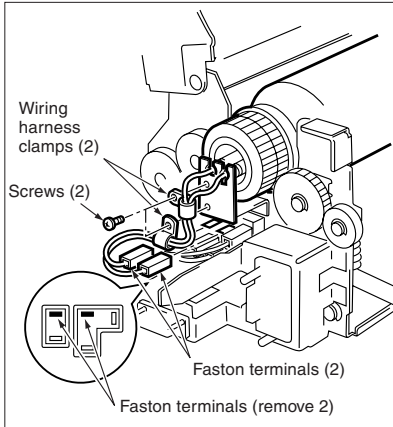
- (1) Remove the fixing unit from the main body.
- (2) Open the fixing unit top cover.
- (3) Remove the two screws at the front to detach the two wire harness clamps.

Caution: Install the wiring clamp screws through the lower mounting holes. If installed through a wrong mounting hole, the fixing unit front cover cannot be installed.

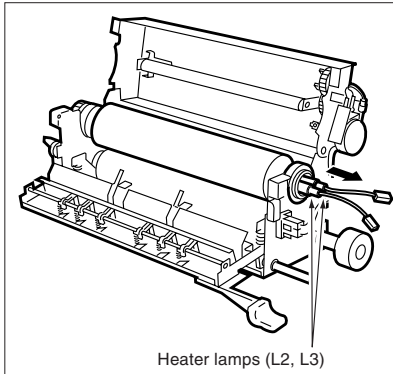
- (4) Remove the two screws to detach the front lamp fixing plate.
- (5) Remove the two Faston terminals.



- (6) Remove the two screws at the back to detach two wiring harness clamps.
- (7) Remove the two Faston terminals at the back.



- (8) Pull out the fixing heater lamps (L2, L3) from the front side of the fixing upper roller.



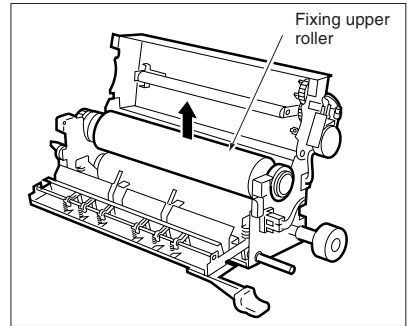
- (9) Reinstall the above parts following the removal steps in reverse.

Caution: When installing new lamps, pay attention to their orientation. The size of the lamp terminal mounting hole in the front lamp fixing plate is different from that in the rear lamp fixing plate. The lamp inserted in the fixing upper roller in the opposite direction cannot be secured properly.

[5] Removing and Reinstalling the Fixing Upper Roller

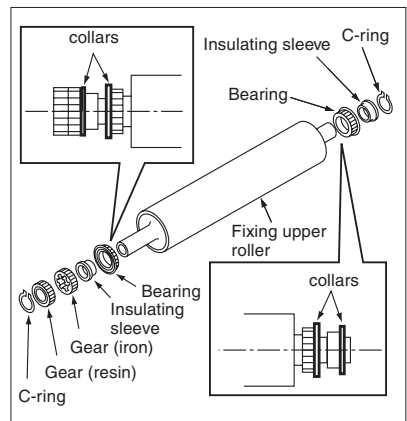
a. Procedure

- (1) Remove the fixing unit from the main body.
- (2) Release the fixing unit lower contact with the upper roller.
- (3) Open the fixing unit top cover.
- (4) Remove the fixing upper roller heater lamps (L2, L3).
- (5) Remove the fixing upper roller upward.



- (6) Remove the two C-rings, two gears, two bearings, and two insulating sleeves from the fixing upper roller.

Caution: Reinstall the bearings and insulating sleeves with their collar facing outward.

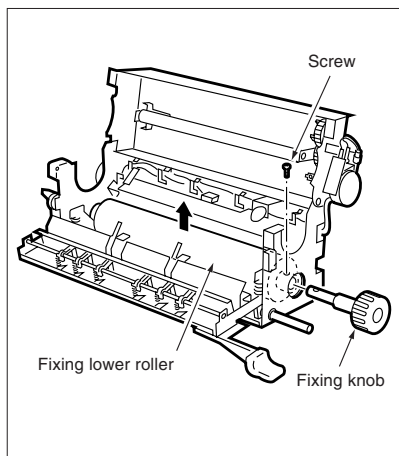


- (7) Reinstall the above parts following the removal steps in reverse.

[6] Removing and Reinstalling the Fixing Lower Roller

a. Procedure

- (1) Remove the fixing upper roller.
- (2) Remove one screw to detach the fixing knob.
- (3) Remove the fixing lower roller upward.



- (4) Reinstall the above parts following the removal steps in reverse.

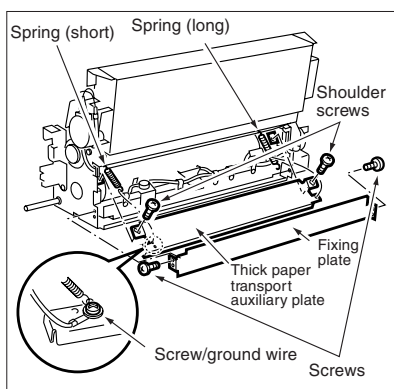
[7] Removing and Reinstalling the Fixing Heat Roller Assembly

a. Procedure

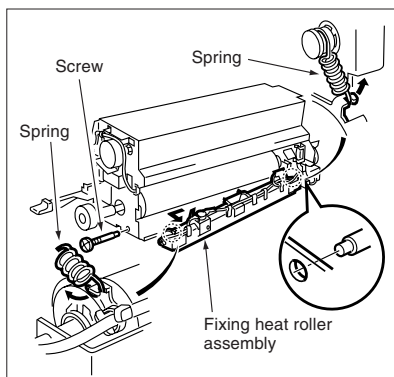
- (1) Remove the fixing unit from the main body.
- (2) Remove the two springs and one screw (along with the ground cable) from the thick paper transport auxiliary plate.

Caution: The front and rear springs are different in size and length. Install them properly.

- (3) Remove the two shoulder screws to detach the thick paper transport auxiliary plate.
- (4) Remove the two screws to detach the fixing plate.



- (5) Remove the two springs and one screw to detach the fixing heat roller assembly.



Caution: When installing the fixing heat roller assembly, be sure to fit the guide pin in the guide hole on the rear side.

- (6) Reinstall the above parts following the removal steps in reverse.

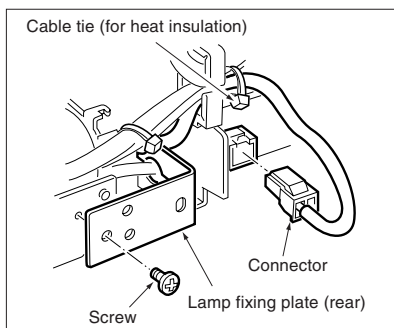
[8] Replacing the Heater Lamp (Heat roller) (L4)

⚠ Caution: Do not touch the fixing heater lamp (heat roller)(L4) with bare hands.

Caution: Install the heater lamp (heat roller) (L4) with the maker mark indication side facing front.

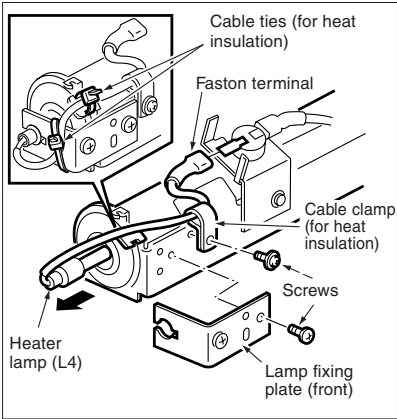
a. Procedure

- (1) Remove the fixing heat roller assembly.
- (2) Cut the insulating cable tie to disconnect the connector (CN462).
- (3) Remove one screw to detach the lamp fixing plate (rear).



- (4) Cut two insulating cable ties and remove the screw securing the cable clamp to remove the Faston terminal.
- (5) Remove one screw to detach the lamp fixing plate (front).

- (6) Remove the heater lamp (L4) from the front side.



- (7) Reinstall the above parts following the removal steps in reverse.

Caution: When reinstalling the lamp, pay attention to its orientation.

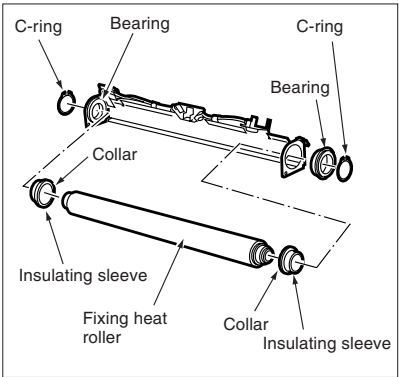
[9] Removing and Reinstalling the Fixing Heat Roller

⚠Caution: Do not touch the fixing heater lamp (lower)(L4) with bare hands.

a. Procedure

- (1) Remove the fixing heat roller assembly.
- (2) Remove the heater lamp (lower) (L4).
- (3) Remove the two C-rings and the front bearing to remove the fixing heat roller.
- (4) Remove two insulating sleeves from the fixing heat roller.

Caution: Reinstall the front and rear insulating sleeves with the collars facing toward the fixing heat roller.

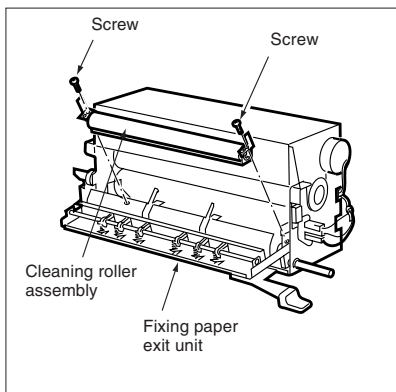


- (5) Reinstall the above parts following the removal steps in reverse.

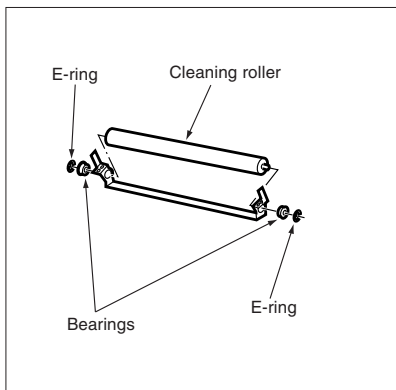
[10] Removing and Reinstalling the Cleaning Roller

a. Procedure

- (1) Open the fixing paper exit unit.
- (2) Remove the two screws to detach the cleaning roller assembly.



- (3) Remove the two E-rings and two bearings to detach the cleaning roller from the cleaning roller assembly.

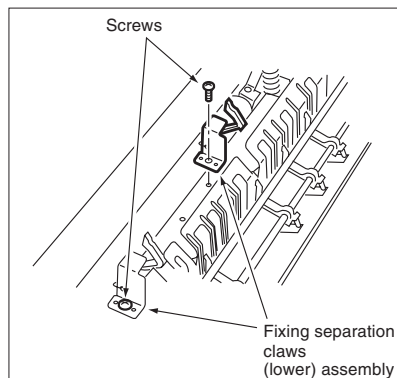


- (4) Reinstall the above parts following the removal steps in reverse.

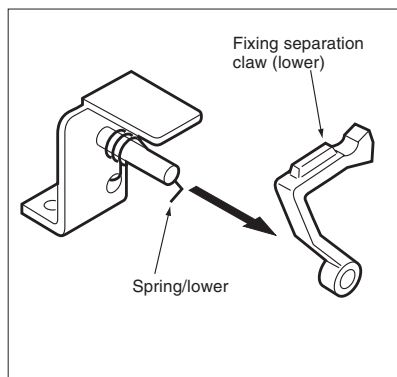
[11] Removing and Reinstalling the Fixing Separation Claws (Lower)

a. Procedure

- (1) Open the fixing paper exit unit.
- (2) Remove the two screws to detach the fixing separation claws (lower) assembly.



- (3) Remove the spring supporting each fixing separation claw (lower).
- (4) Remove the fixing separation claws (lower).

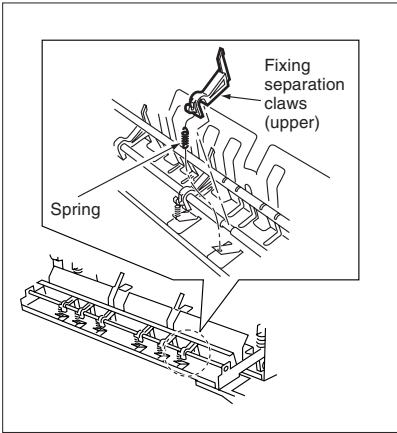


- (5) Reinstall the above parts following the removal steps in reverse.

[12] Removing and Reinstalling the Fixing Separation Claws (Upper)

a. Procedure

- (1) Open the fixing paper exit unit.
- (2) Remove the six springs connected to the fixing separation claws.
- (3) Remove the six fixing separation claws.

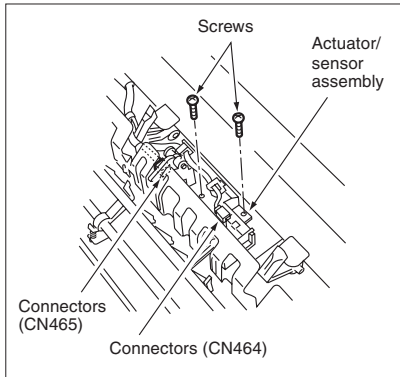


- (4) Reinstall the above parts following the removal steps in reverse.

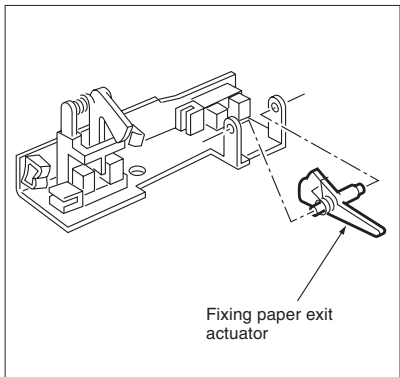
[13] Removing and Reinstalling the Actuator for Fixing Exit PS (PS2)

a. Procedure

- (1) Open the fixing paper exit unit.
- (2) Disconnect the two connectors (CN464, 465)
- (3) Remove one screw to detach the fixing separation claw (lower) (on the drive side).
- (4) Remove the two screws to detach the actuator/sensor assembly.



- (5) Remove the spring from the actuator/sensor assembly to detach the actuator for fixing exit PS (PS2).



- (6) Reinstall the above parts following the removal steps in reverse.

[14] Removing and Reinstalling Fixing Temperature Sensors 1 and 2

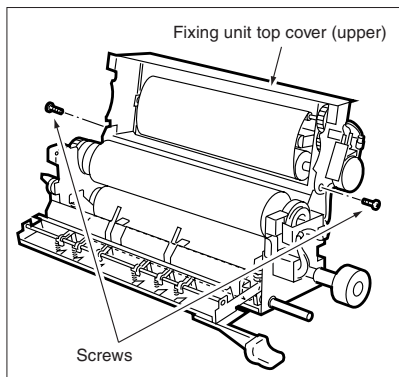
Caution 1: After reinstalling fixing temperature sensor 2, make sure that the sensor touches the fixing upper roller.

Caution 2: Make sure the sensor wires do not touch the fixing upper roller.

Caution 3: When reinstalling fixing temperature sensor 1, adjust its position using the positioning jig and secure it with screws. Be sure to apply screw lock agent to the screws.

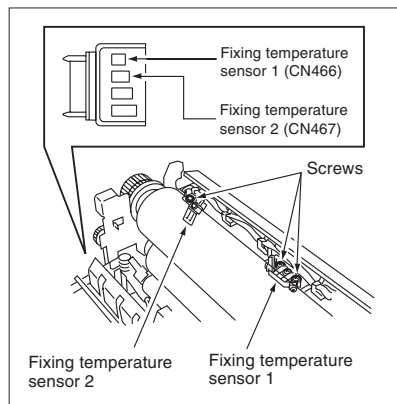
a. Removal procedure

- (1) Open the fixing unit top cover.
- (2) Remove the two screws to detach the fixing unit top cover.



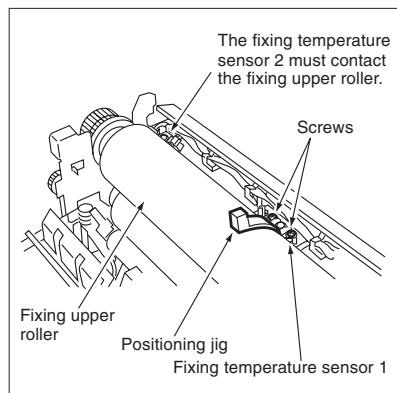
- (3) Disconnect the two connectors (fixing temperature sensor 1, CN466; fixing temperature sensor 2, CN467) and release the sensor wires from the cable guides.
- (4) Remove the two screws to detach fixing temperature sensor 1.

- (5) Remove one screw (on the fixing plate side) to detach fixing temperature sensor 2.

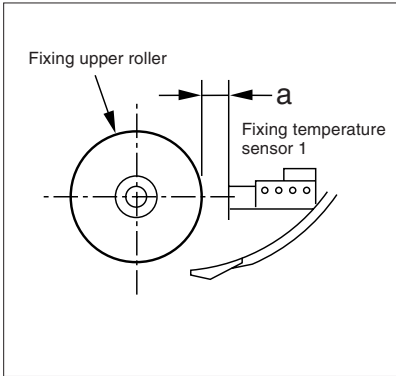


b. Reinstallation procedure

- (1) Secure fixing temperature sensor 2 with a screw.
- (2) Make sure that fixing temperature sensor 2 touches the fixing upper roller. If they do not touch each other, be sure to bring the sensor in touch with the roller.
- (3) Set a fixing temperature sensor positioning jig between fixing temperature sensor 1 and fixing upper roller, and secure fixing temperature sensor 1 with two screws so that the distance between the sensor and roller is equal to the thickness of the jig.



- (a) Set the distance "a" between the fixing temperature sensor 1 and fixing upper roller so that it is equal to the thickness of the positioning jig.



Standard value of a: 0.75 ± 0.1 mm

- (4) Apply screw lock agent to the two screws securing fixing temperature sensor 1.
 (5) Secure the wires of fusion temperature sensors 1 and 2 in the wire guides, and connect their connectors.
 (6) Reinstall other parts following the removal steps in reverse.

[15] Removing and Reinstalling Fixing Temperature Sensors 3 and 4

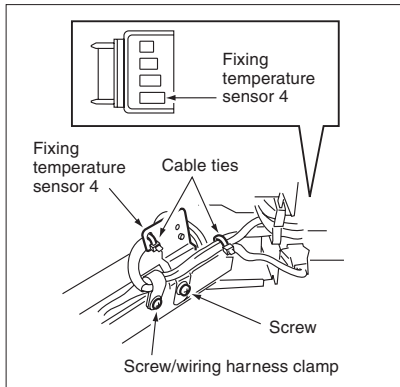
Caution 1: After reinstalling fixing temperature sensor 4, make sure that the sensor touches the fixing heat roller (upper).

Caution 2: Make sure the sensor wires do not touch the fixing heat roller.

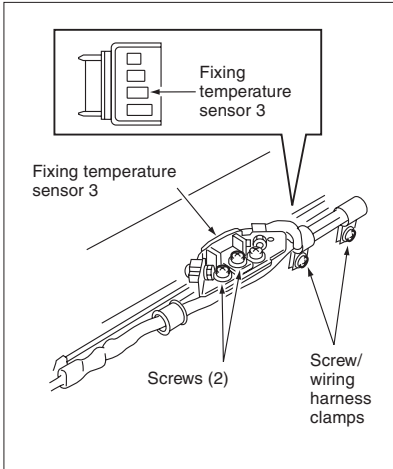
Caution 3: When reinstalling fixing temperature sensor 3, adjust its position using the positioning jig and secure it with screws. Be sure to apply screw lock agent to the screws.

a. Removal procedure

- (1) Remove the fixing heat roller assembly.
- (2) Disconnect one connector (CN469), remove the screw to detach the cable clamp, and cut insulating ties.
- (3) Remove one screw (on the fixing plate side) to remove fixing temperature sensor 4.

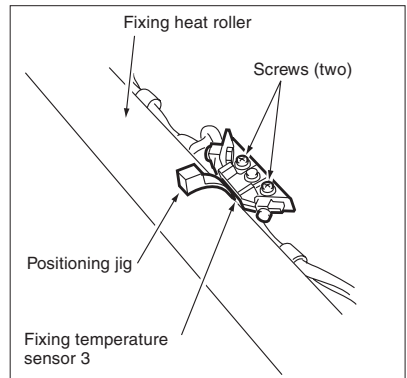


- (4) Disconnect one connector (CN468) and remove four screws to detach two wire clamps.
- (5) Remove the two screws to detach fixing temperature sensor 3.

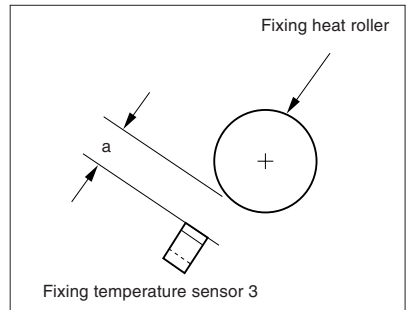


b. Reinstallation procedure

- (1) Secure fixing temperature sensor 4 with a screw.
- (2) Make sure that fixing temperature sensor 4 touches the fixing heat roller (upper). If they do not touch each other, be sure to bring the sensor in touch with the roller.
- (3) Set a fixing temperature sensor positioning jig between fixing temperature sensor 3 and fixing heat roller, and secure fixing temperature sensor 3 with two screws so that the distance between the sensor and roller is equal to the thickness of the jig.



- (a) Set the distance "a" between the fixing temperature sensor 3 and fixing heat roller so that it is equal to the thickness of the positioning jig.



Standard value of $a = 0.7 \pm 0.1$ mm

- (4) Apply screw lock agent to the two screws securing fixing temperature sensor 3.
- (5) Secure the wires of fixing temperature sensors 3 and 4 with wire clamp and ties, and connect the connectors.
- (6) Reinstall other parts following the removal steps in reverse.

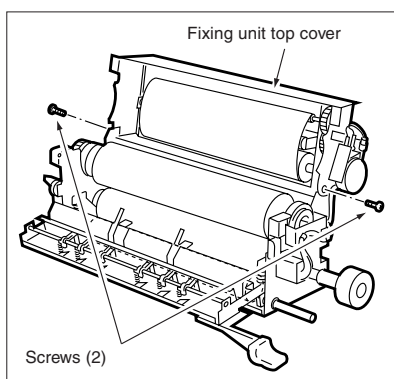
[16] Removing and Reinstalling the Thermostat (Upper)

Caution 1: After reinstalling the thermostat (upper), make sure that its wires do not touch the fixing upper roller.

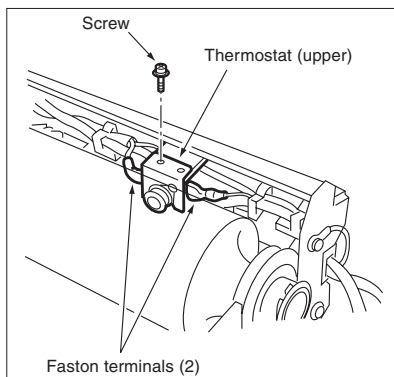
Caution 2: When reinstalling the thermostat (upper), adjust its position using the positioning jig and secure it with screws. Be sure to apply screw lock agent to the screws.

a. Removal procedure

- (1) Open the fixing unit top cover.
- (2) Remove the two screws to detach the fixing unit top cover.

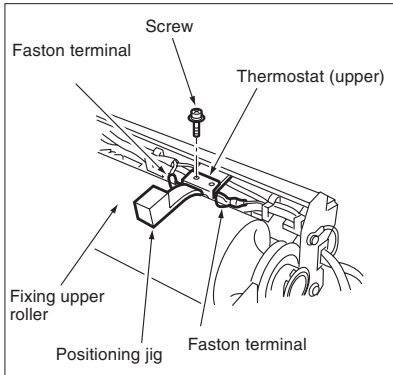


- (3) Remove one screw and remove two Faston terminals to detach the thermostat.

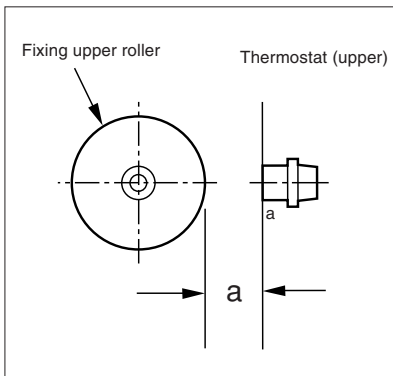


b. Reinstallation procedure

- (1) Connect two Faston terminals to the thermostat (upper).
- (2) Set a thermostat positioning jig between the thermostat (upper) and fixing upper roller, and secure the thermostat (upper) with one screw so that the distance between the roller and thermostat equal to the thickness of the jig.
- (3) Apply screw lock agent to the screw securing the thermostat (upper).
- (4) Reinstall other parts following the removal steps in reverse.



- (a) Set the distance "a" between the thermostat (upper) and fixing upper roller so that it is equal to the thickness of the positioning jig.



Standard value of $a = 3.0 \pm 0.2 \text{ mm}$

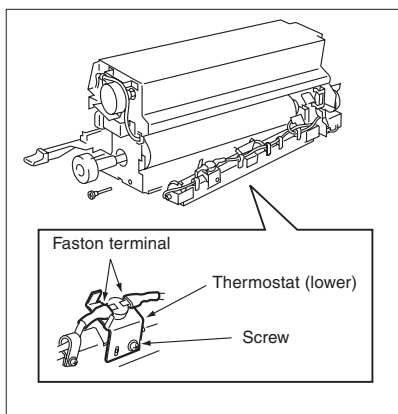
[17] Removing and Reinstalling the Thermostat (Lower)

Caution 1: After reinstalling the thermostat (lower), make sure that its wires do not touch the fixing heat roller.

Caution 2: When reinstalling the thermostat (lower), adjust its position using the positioning jig and secure it with screws. Be sure to apply screw lock agent to the screws.

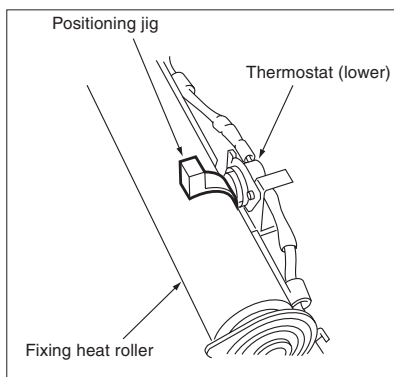
a. Removal procedure

- (1) Remove the fixing heat roller assembly.
- (2) Remove two Faston terminals from the thermostat (lower).
- (3) Remove one screw to detach the thermostat (lower).

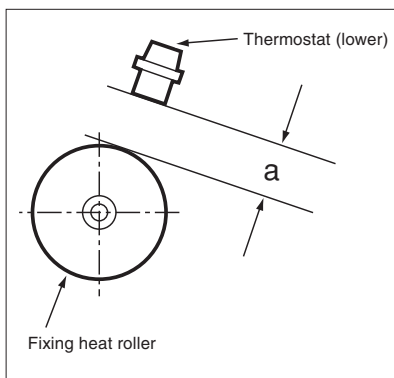


b. Reinstallation procedure

- (1) Set a thermostat positioning jig between the thermostat (lower) and fixing heat roller, and secure the thermostat (lower) with one screw so that the distance between the roller and thermostat equal to the thickness of the jig.



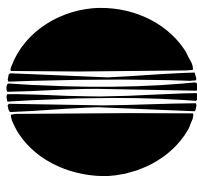
- (a) Set the distance "a" between the thermostat (lower) and fixing heat roller so that it is equal to the thickness of the positioning jig.



Standard: $a = 3.0 \pm 0.20 \text{ mm}$

- (2) Connect two Faston terminals to the thermostat (lower).
- (3) Apply screw lock agent to the screw securing the thermostat (lower).
- (4) Reinstall other parts following the removal steps in reverse.

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Di750

SERVICE MANUAL

[FIELD SERVICE]



There are using both Official Options name and Popular Options name in the Di750 Service Manual and Option Service Manual.

| Official Options name | : | Popular Options name |
|-----------------------|---|----------------------|
| EDH-2 | : | RADF |
| FN-104 | : | FNS |
| FN-4 | : | FNS |
| Cover Inserter A | : | PI |
| In-System Writer | : | ISW |
| C-305/C-305L | : | LT and LCT |
| TMG-1 | : | TU |
| HDD | : | HDD |
| (Hard Disk Drive) | | |

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SAFETY AND IMPORTANT WARNING ITEMS




Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE




Changes may have been made to this copier to improve its performance after this Service Manual was printed. Accordingly, Minolta Corporation, makes no representations or warranties, either expressed or implied, that the information contained in this Service Manual is complete or accurate. It is understood that the user of this Service Manual must assume all risks or personal injury and/or damage to the copier while servicing the copier for which this Service Manual is intended.

Therefore, this Service Manual must be read carefully before doing service work both in the course of the technical training and even after that, for keeping the correct maintenance and control of the copier. Keep this Service Manual also for the future service. When it is impossible to read the description about safety and warning (due to contamination or tear), the relevant page should be replaced.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Manual, each of three expressions, “ DANGER”, “ WARNING” and “ CAUTION” is defined as follows together with a symbol mark to be used in a limited meaning.

When servicing, the relevant works (disassembling, assembling, adjustment, repair and maintenance) need to be conducted with utmost care.

- | | | |
|---|-----------------|---|
|  | DANGER: | Actions having a high possibility of suffering death or serious wound |
|  | WARNING: | Actions having a possibility of suffering death or serious wound |
|  | CAUTION: | Actions having a possibility of suffering a slight wound, medium trouble and material damage |

SAFETY WARNINGS

[1] MODIFICATIONS NOT AUTHORIZED BY Minolta

Minolta copiers are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.

Photocopier design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degrading performance and safety. Such modifications are therefore strictly prohibited. The points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

PROHIBITED ACTIONS :

- (1) Using extension cables or a different power cord than specified by Minolta.
- (2) Using other fuses than specified by Minolta. Safety will not be assured, leading to a risk of fire and injury.
- (3) Disabling fuses or bridging fuse terminals with wire, metal clips, solder or similar. (This applies also to thermal fuses.)
- (4) Removing air filters (except for replacement).
- (5) Disabling relay functions (such as wedging paper between relay contacts, etc.).
- (6) Disabling safety functions (interlocks, safety circuits, etc.). Safety will not be assured, leading to a risk of fire and injury.
- (7) Performing actions to copier not described in the instruction manual or the service handbook.
- (8) Using parts other than specified by Minolta.

[2] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

Minolta copiers are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the customer engineer must perform regular safety checks.

1. Advance Preparation for Safety Checks

CAUTION:

- (1) Wear clothing that facilitates work and is designed for safety.
- (2) Carry out all procedures carefully to prevent injury.
- (3) Be sure to disconnect the power cord of the copier and all optional equipment from the AC outlet. Simply turning off the power switch is not sufficient, because paper feed units or other electrical equipment may be powered also when the power switch is turned off.
- (4) Proceed with special care when performing operation checks or adjustment while the unit is powered. When carrying out operation checks or adjustment while external covers are removed, the risk of electrical shock exists when touching parts which carry high voltage or electrical charge. The risk of injury exists when touching moving parts such as gears or chains.

2. Safety Checkpoints

The following list is not exhaustive, but it includes actions which must be carried out at every on-site service.

CAUTION:

- (1) Check external covers and the frame for sharp edges, burrs, or nicks.
- (2) Check external covers and hinges for loosening or damage.
- (3) Check wiring for squeezing or damage.
- (4) Check power cord for insulation problems (conductor must not be exposed).
- (5) Check power cord and cable ties etc. for loosening from frame.

WARNING:

- (1) Verify that the copier is properly grounded. If a problem is detected, establish a proper ground connection.
- (2) Connecting the ground lead to an improper point such as listed below results in a risk of explosion and electric shock.

Unsuitable ground points:

- Gas pipe
- Lightning rod
- Telephone line ground
- Plastic water pipe or water pipe or faucet that has not been approved by authorities for grounding use

3. Description of Safety Checks

CAUTION:

- (1) Before performing safety check work, read all relevant documentation (Service Manual, technical notices, etc.) and proceed according to the prescribed procedure, using only the prescribed tools. Do not carry out any adjustments not described in the documentation.
- (2) If the power cord is damaged, replace it only with the specified power cord. If the power cord insulation has been damaged and there are exposed sections, short-circuits and overheating may occur, leading to a serious fire risk.
- (3) Do not route the power cord so that it can be stepped on or pinched. Otherwise overheating may occur, leading to a serious fire risk.
- (4) When disconnecting any cables, always grasp the connector and not the cable (especially in the case of AC and high-voltage leads).
- (5) Carefully remove all toner remnants from electrical parts, electrodes, etc.
- (6) Make sure that wiring cannot come into contact with sharp edges, burrs, or other pointed parts.
- (7) Double-check to make sure that all screws, components, wiring, connectors, etc. that were removed for safety check maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)
- (8) When installation and preventive maintenance, verify that the power cord has been securely plugged into the AC outlet. Contact problems may lead to increased resistance, overheating, and the risk of fire.


WARNING:

- (1) Before disassembling or adjusting the write unit or any parts that use a laser, make sure that the power cord has been disconnected.
- (2) Do not remove the main cover of the write unit. Direct exposure of the eye to laser beams may lead to blindness.
- (3) Do not turn the copier on while the write unit is not installed in its normal position.
- (4) Danger of explosion if battery is incorrectly replaced, replace only with the same or equivalent recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.


VORSICHT:

- (4) Explosionsgefahr bei unsachgemäßem Austausch der Batterie. Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

[3] HANDLING OF MATERIALS FOR SERVICING

-  CAUTION: Drum cleaner (alcohol-based) and roller cleaner (acetone-based) are highly flammable and must be handled with care. When using these materials for cleaning of copier parts, observe the following precautions.

- (1) Disconnect the power cord from the AC outlet.
- (2) Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.
- (3) Perform cleaning only in an environment where sufficient ventilation is assured. Breathing large quantities of organic solvents can lead to discomfort.
- (4) Do not replace the cover or turn the unit on before any solvent remnants on the cleaned parts have fully evaporated.

-  CAUTION: Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes etc. It may be stimulative. If the substances get in the eye, rinse it with plenty of water immediately. When symptoms are noticeable, consult a physician.

[4] CONCLUSION

- (1) Safety of users and customer engineers depends highly on accurate maintenance and administration. Therefore, safety can be maintained by the appropriate by the proper daily service work conducted by the customer engineer.
- (2) When performing service, each copier on the site must be tested for safety. The customer engineer must verify the safety of parts and ensure appropriate management of the equipment.

SAFETY INFORMATION

IMPORTANT INFORMATION

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States.

This copier is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this copier is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

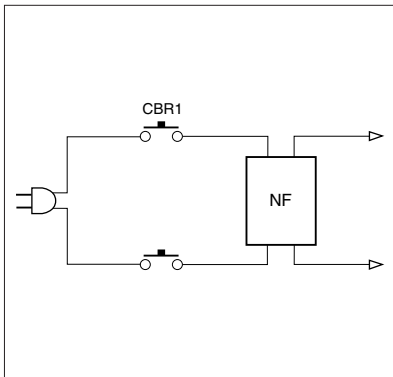
SAFETY CIRCUITS

This machine is provided with the following safety circuits to prevent machine faults from resulting in serious accidents.

- [1] Overall protection circuit
- [2] L2, L3, and L4 (fixing heater lamps) overheating prevention circuit

These safety circuits are described below to provide the service engineer with a renewed awareness of them in order to prevent servicing errors that may impair their functions.

[1] Overall Protection Circuit

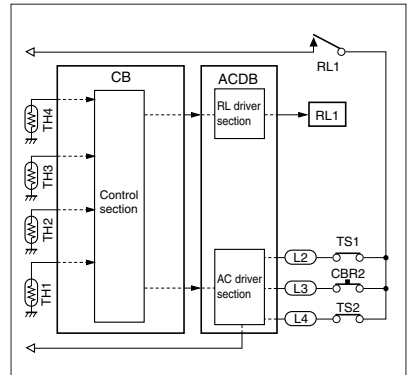


1. Protection by CBR1 (circuit breaker 1)

The CBR1 interrupts the AC line instantaneously when an excessive current flows due to a short in the AC line.

⚠ Caution: The CBR1 function must not be deactivated under any circumstances.

[2] Protection by L2, L3, and L4 (fixing heaters) overheating prevention circuit



1. Protection by software

The output voltage from TH1 (fixing temperature sensor 1) is read by the CPU. If this voltage is abnormal, L2 (fixing heater lamp 1), L3 (fixing heater lamp 2), and L4 (fixing heater lamp 3), and RL1 (main relay) are turned OFF.

⚠ Caution: Do not change the gap between the roller and TH1. When replacing TH1, check the specified mounting dimensions.
The RL1 function must not be deactivated under any circumstances.

2. Protection by the hardware circuit

The output voltages from TH1 and TH2 (fixing temperature sensor 2), TH3 (fixing temperature sensor 3), and TH4 (fixing temperature sensor 4) are compared with the abnormality judgement reference value in the comparator circuit. If the output voltage from TH1, TH2, TH3, or TH4 exceeds the reference value, L2, L3, L4, and RL1 are turned off in hardware means.

⚠ Caution: Periodically check the TH2 and TH4 faces contacting the roller, and replace TH2 and/or TH4 if any abnormality is detected.
Do not change the gap between the roller and each sensor TH2 and TH4. When replacing TH2 or TH4, check the specified mounting dimensions.
The RL1 function must not be deactivated under any circumstances.

3. Protection by TS1 (thermostat (upper)) and TS2 (thermostat (lower))

TS1 is turned off when the temperature of the fixing roller (upper) exceeds the specified value, and TS2 is turned off when the temperature of the heating (upper) roller exceeds the specified value, thus interrupting the power to L2 and L4 directly.

⚠ Caution: Do not use any other electrical conductor in place of TS1 and TS2.

4. Protection by CBR2 (circuit breaker 2)

The CBR2 interrupts the AC line for L3 instantaneously when an excessive current flows due to a short in the AC line.

⚠ Caution: The CBR2 function must not be deactivated under any circumstances.

HANDLING OF THE PC DRUM

During Transportation/Storage:

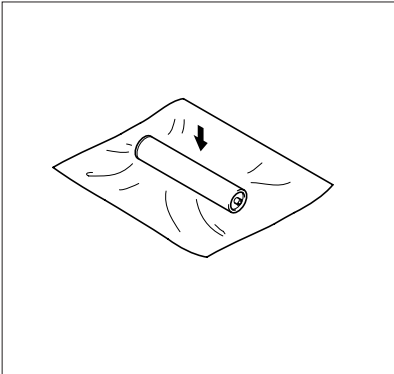
- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between -20°C and $+40^{\circ}\text{C}$.
- In summer, avoid leaving the PC Drum in a car for a long time.

Handling:

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its container or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.

1. Place the PC Drum on the Drum Cloth.

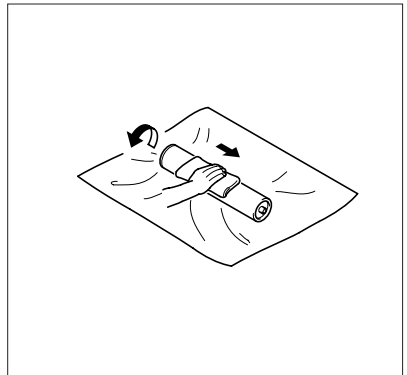


2. Gently wipe the residual toner off the surface of the PC Drum with a dry, dust-free cotton pad.

- A. Rotate the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.

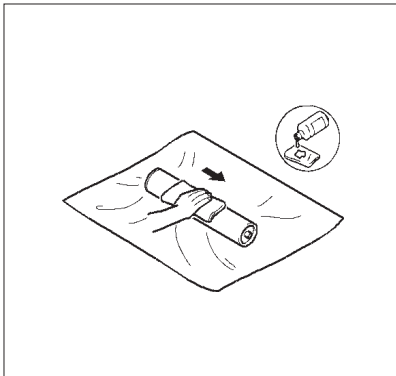
- B. Rotate the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the dust-free cotton pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

* At this time, always use a CLEAN face of the dry dust-free cotton pad until no toner is evident on the face of the Pad after wiping.

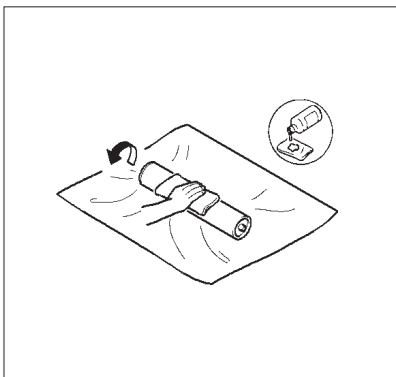


3. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused dust-free cotton pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

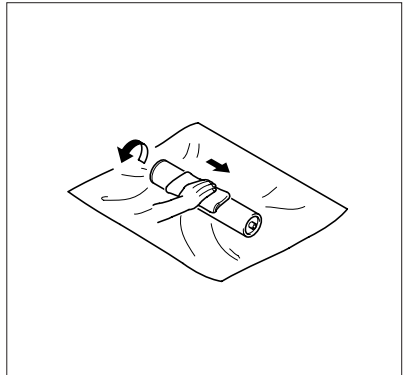
* Never move the pad back and forth.



4. Using the SAME face of the pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.



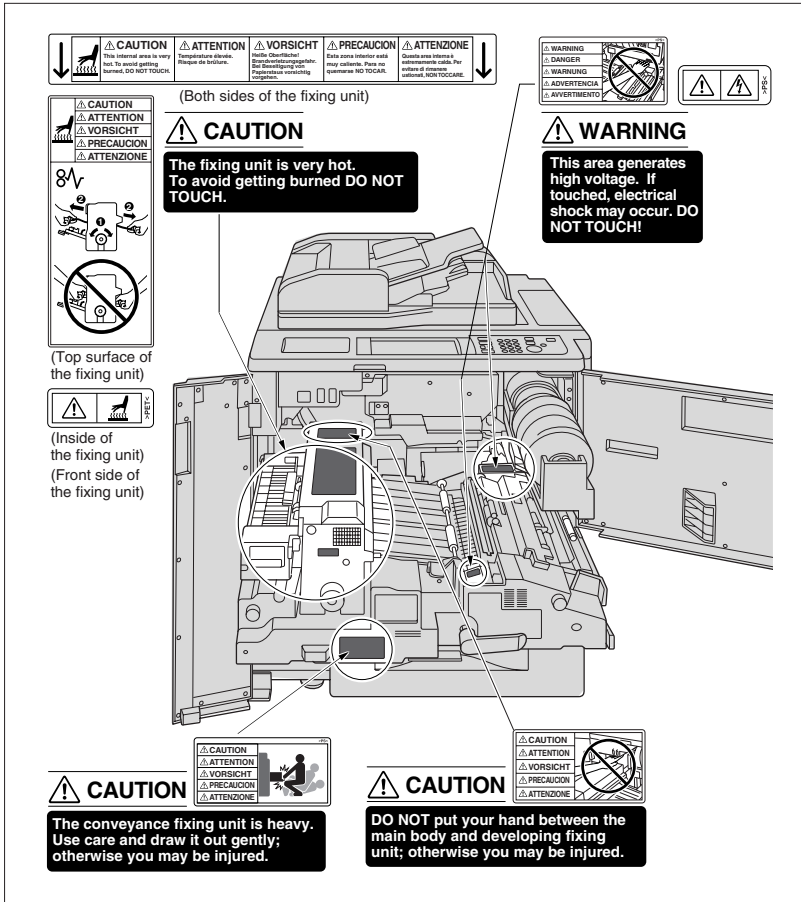
5. Finally, gently wipe the entire surface of the PC Drum.



INDICATION OF WARNING ON THE MACHINE

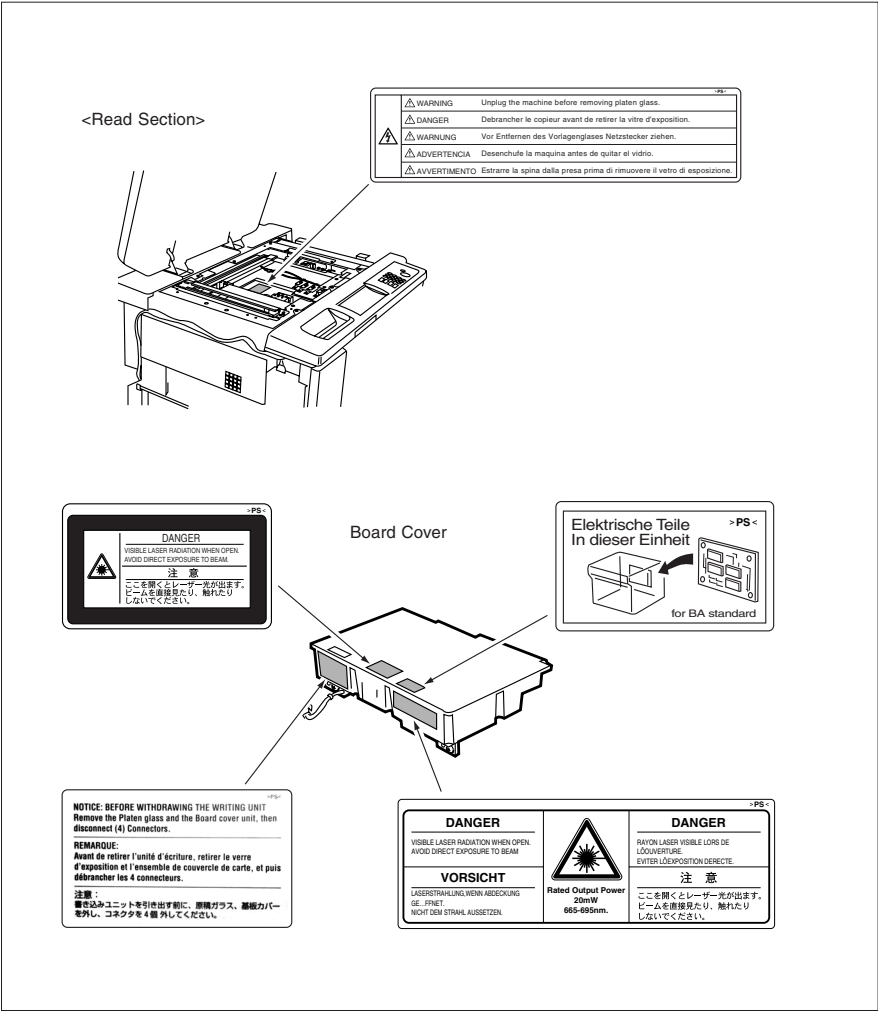
Caution labels shown below are attached in some areas on/in the machine areas.

When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and shock hazards.



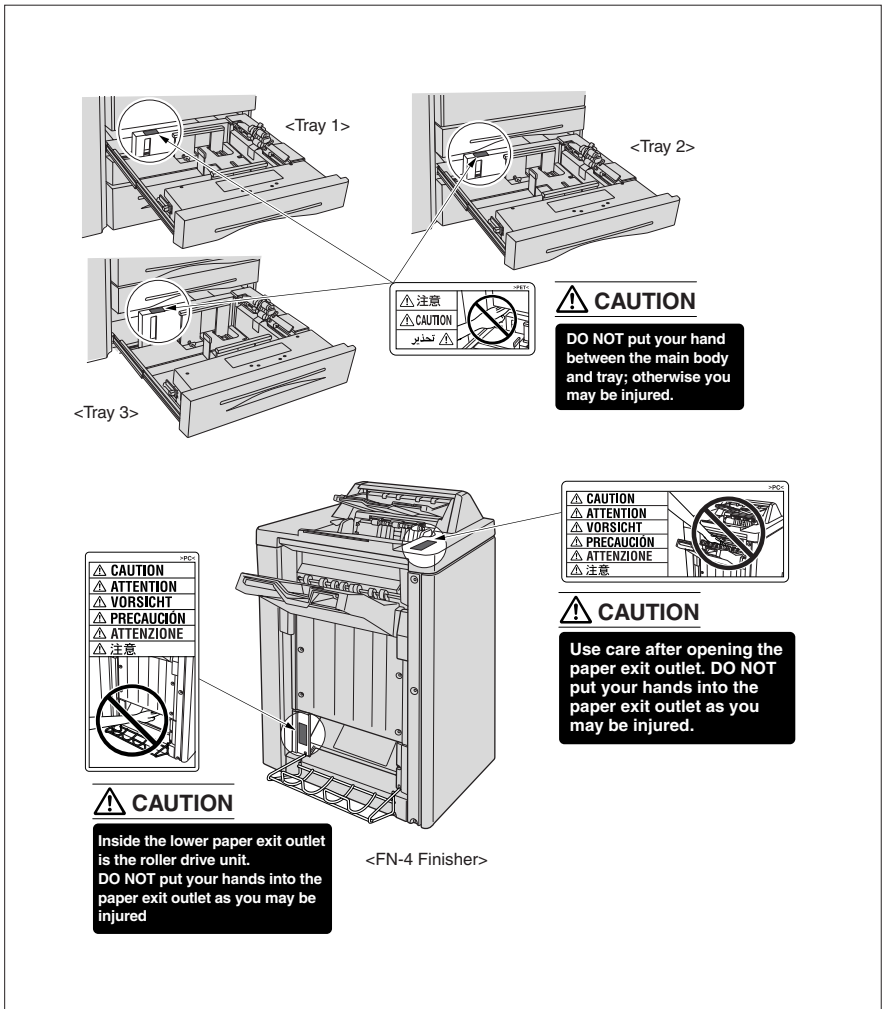
⚠ Caution:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.



⚠ CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from.
Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.

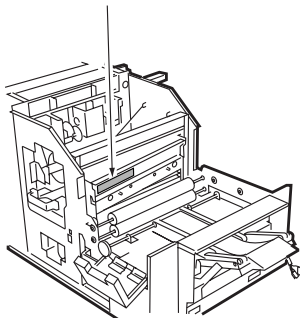


CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.

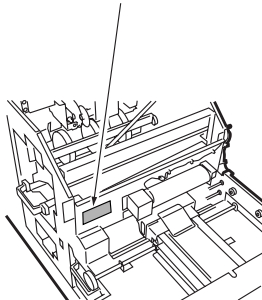
⚠ WARNING

| | | |
|---------------|----------------|---|
| ▲ WARNING | ▲ WARNING |  |
| ▲ DANGER | ▲ DANGER | |
| ▲ ADVERTENCIA | ▲ ADVERTENCIA | |
| ▲ ADVERTÊNCIA | ▲ ADVERTIMENTO | |



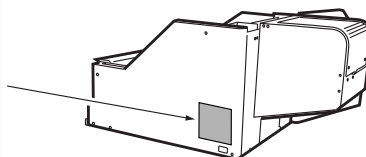
CAUTION

A vertical column of safety warning icons on the left, each consisting of a triangle with an exclamation mark followed by the word in a different language: CAUTION, ATTENTION, PRECAUCIÓN, CUIDADO, CAUTION, ATTENTION, VORSICHT, PRECAUCIÓN, ATTENZIONE, and 注意. To the right of these icons is a diagram of the machine's internal components, showing a hopper, a mixing chamber, and a discharge chute. A hand is shown operating a lever on the side of the machine.



WARNING

| | | |
|---|----------------------|---|
|  | ⚠ WARNING | Life/leg the machine before removing parts. |
|  | ⚠ DANGER | Il brancher l'appareil avant de retirer les pièces est dangereux. |
|  | ⚠ ADVERTENCIA | Conectar la máquina antes de quitar las partes. |
|  | ⚠ AVVERTENZA | Collegare la macchina prima di rimuovere le parti. |
|  | ⚠ WARNING | Unplug the machine before removing parts. |
|  | ⚠ DANGER | Il brancher l'appareil avant de retirer les pièces est dangereux. |
|  | ⚠ WARNING | Von Abklemmen der Schutzverkleidung |
|  | ⚠ ADVERTENCIA | Desconectar la máquina antes de retirar las partes. |
|  | ⚠ AVVERTENZA | Smontare la macchina prima di togliere i componenti. |
|  | ⚠ 警告 | パーツを交換する前に、電源プラグを抜いてください。 |
|  | ⚠ 警告 | 在取下列部件之前，必须切断电源。 |
|  | ⚠ 警告 | 在拆卸下列部件之前，必须关闭电源。 |



<TMG-1 Trimmer>

CAUTION:

You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.



ADJUSTMENT

Blank page

HOW TO USE THIS SECTION

[1] Scope and Precautions

This section provides detailed information about the adjustment items and procedures. Before addressing customer complaints, perform the following checks:

1. Check whether the power supply voltage meets the specifications.
2. Check whether the power supply is properly grounded.
3. Check whether this machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that produce electrical noise).
4. Check whether the installation environment is good.
 - a. The machine must be installed in a properly ventilated area not exposed to high temperature, high humidity, and direct sunlight.
 - b. The machine must be installed on the horizontal floor.
5. Check whether original has a problem to cause the defective image.
6. Check whether the selected density value is correct.
7. Check whether the surface of the platen glass and the bottom of the RADF are clean.
8. Check whether correct paper is used for copying.
9. Check whether copying materials and parts (e.g., developer, drum, and cleaning blade) are replenished and replaced when they reach the end of the useful life.
10. Check whether toner remains.
4. Take care not to damage the drum with tools and so on.
5. Do not touch IC pins with bare hands.

When servicing the machine, observe the following precautions:

1. Only either side of the AC line is shut off when the main power of this machine is turned off. Always unplug the power cord before starting the service work. If it is necessary to service the machine with the power on, take care not to be caught in the scanning gear of the exposure unit.
2. Special care should be taken when handling the fixing unit because it operates at extremely high temperatures.
3. The developing unit has a strong magnetic field. Keep watches and measuring equipment away from it.

ADJUSTMENT

ADJUSTMENTS MADE WHEN REPLACING PARTS

Adjustments (including checks) and settings are not only required when a customer complaint about the copy image quality is received, but also after replacing or reassembling parts.

[How to Read Tables]

Components of the tables used in this section are as follows:

1. Mode

Adjustment mode to be selected.

[P] : P mode

[25] : 25 mode

[36] : 36 mode

[47] : 47 mode

2. Code

Code and copy quantity setting button used in each mode.

3. Page

Page in the "ADJUSTMENT" section.

4. Circled numbers

①, ②... : Indicates adjustments (including checks) must be made in order of precedence.

○ (Circle without numeric character) : Indicates adjustments (including checks) can be made independently.

LIST OF ADJUSTMENT ITEMS

| | | | | Mode | Page | Finisher | RADF unit | Memory board | Fixing unit | Read unit | ADU unit | Mis-centering detection sensor | Registration clutch | Registration unit | Registration roller | Tray pick-up solenoid | Paper up/down plate hoist wires | Bypass paper feed unit | Each tray unit | Dust-proof glass | Write unit | High voltage unit | Developer | Drum |
|----|--------------------|----------------------------|---|------|------|----------|-----------|--------------|-------------|-----------|----------|--------------------------------|---------------------|-------------------|---------------------|-----------------------|---------------------------------|------------------------|----------------|------------------|------------|-------------------|-----------|------|
| 1 | Process adjustment | High Voltage Adjustment | High Voltage Auto Adjustment | | 1-52 | | | | | | | | | | | | | | | | | | | |
| 2 | | Drum Pecularity Adjustment | Blade setting mode | | 1-53 | | | | | | | | | | | | | | | | | | | |
| 3 | | | Auto drum potential adjustment | | 1-54 | | | | | | | | | | | | | | | | | | | |
| 4 | | | Auto maximum density adjustment (Dmax adjustment) | | 1-54 | | | | | | | | | | | | | | | | | | | |
| 5 | | | Auto dot diameter adjustment | | 1-55 | | | | | | | | | | | | | | | | | | | |
| 6 | | | LD1 offset adjustment | | 1-55 | | | | | | | | | | | | | | | | | | | |
| 7 | | | LD2 offset adjustment | | 1-56 | | | | | | | | | | | | | | | | | | | |
| 8 | | | Auto Gamma Adjustment | | 1-57 | | | | | | | | | | | | | | | | | | | |
| 9 | Image adjustment | Tray Adjustment | | | 1-58 | | | | | | | | | | | | | | | | | | | |
| 10 | | Magnification Adjustment | Printer vertical magnification adjustment | | 1-59 | | | | | | | | | | | | | | | | | | | |
| 11 | | | Printer horizontal magnification adjustment | | 1-60 | | | | | | | | | | | | | | | | | | | |
| 12 | | | Scanner (platen) vertical adjustment | | 1-60 | | | | | | | | | | | | | | | | | | | |
| 13 | | | Scanner (RADF) vertical magnification adjustment | | 1-61 | | | | | | | | | | | | | | | | | | | |
| 14 | | Timing Adjustment | Printer restart timing adjustment | | 1-62 | | | | | | | | | | | | | | | | | | | |
| 15 | | | Printer resist loop adjustment | | 1-63 | | | | | | | | | | | | | | | | | | | |
| 16 | | | Printer pre-resist adjustment | 36 | 1-63 | | | | | | | | | | | | | | | | | | | |
| 17 | | | Printer lead edge timing adjustment | | 1-64 | | | | | | | | | | | | | | | | | | | |
| 18 | | | Scanner restart timing adjustment | | 1-64 | | | | | | | | | | | | | | | | | | | |
| 19 | | | RADF restart timing adjustment | | 1-65 | | | | | | | | | | | | | | | | | | | |
| 20 | | | RADF resist loop adjustment | | 1-65 | | | | | | | | | | | | | | | | | | | |
| 21 | | RADF Adjustment | RADF density adjustment | | 1-66 | | | | | | | | | | | | | | | | | | | |
| 22 | | | RADF original size adjustment | | 1-67 | | | | | | | | | | | | | | | | | | | |
| 23 | | | RADF sensor sensitivity adjustment | | 1-67 | | | | | | | | | | | | | | | | | | | |
| 24 | | | RADF incline offset adjustment | | 1-68 | | | | | | | | | | | | | | | | | | | |
| 25 | | Centering Adjustment | Printer centering adjustment | | 1-69 | | | | | | | | | | | | | | | | | | | |
| 26 | | | Scanner centering adjustment | | 1-69 | | | | | | | | | | | | | | | | | | | |
| 27 | | | RADF centering adjustment | | 1-70 | | | | | | | | | | | | | | | | | | | |
| 28 | | Warp adjustment (Copier) | Scanner (platen) warp (main scan) | | 1-70 | | | | | | | | | | | | | | | | | | | |
| 29 | | | Scanner (platen) warp (sub-scan) | | 1-70 | | | | | | | | | | | | | | | | | | | |
| 30 | | | Scanner (RADF) warp (main scan) | | 1-70 | | | | | | | | | | | | | | | | | | | |
| 31 | | | Scanner (RADF) warp (sub-scan) | | 1-70 | | | | | | | | | | | | | | | | | | | |

ADJUSTMENT

| | | | Mode | Page | Finisher | RADF unit | Memory board | Fixing unit | Read unit | ADU unit | Mis-centering detection sensor | Registration clutch | Registration unit | Registration roller | Tray pick-up roller unit drive solenoid | Paper up/down plate wires | Bypass paper feed unit | Each tray unit | Dust-proof glass | Write unit | High voltage unit | Toner (develop) | Drum |
|----|--|--|---------|-------|----------|-----------|--------------|-------------|-----------|----------|--------------------------------|---------------------|-------------------|---------------------|---|---------------------------|------------------------|----------------|------------------|------------|-------------------|-----------------|------|
| 32 | Finisher adjustment | Stapling and folding stopper adjustment (FN-4 only) | 1-80 | 36 | ○ | ○ | ○ | | | | | | | | | | | | | | | | |
| 33 | | Folding stopper adjustment (FN-4 only) | 1-80 | | ○ | ○ | ○ | | | | | | | | | | | | | | | | |
| 34 | | Cover sheet tray size adjustment (Cover Insert A only) | 1-81 | | | | ○ | | | | | | | | | | | | | | | | |
| 35 | | Trimmer stopper adjustment (TMG-1 only) | 1-81 | | | | ○ | | | | | | | | | | | | | | | | |
| 36 | Centering adjustment | | 1-98 | OTHER | | | | | | | | | | | | | | | | | | | |
| 37 | Paper up/down plate horizontal adjustment | | 1-101 | | | | | | | | | | | | | ○ | | | | | | | |
| 38 | Skew adjustment | | 1-105 | | | | | | | | | | | | | | | | | | | | |
| 39 | Tray Spring Pressure Adjustment | | 1-108 | | | | | | | | | | | | | | | | | | | | |
| 40 | Paper Feed Height (Upper Limit) Adjustment | | 1-109 | | | | | | | | | | | | | | | | | | | | |
| 41 | Pick-up Release Amount Adjustment | | 1-112 | | | | | | | | | | | | ○ | | | | | | | | |
| 42 | Alignment with pickup unit | | — | | | | | ○ | | | | | | | | | | | | | | | |
| 43 | AC and DC drawer positioning | | — | | | | | ○ | | | | | | | | | | | | | | | |
| 44 | ADU gate gap adjustment | | — | | | | | | | ○ | | | | | | | | | | | | | |
| 45 | RADF Mounting Position Adjustment | | 1-114 | | | | | | | | | | | | | | | | | | | | |
| 46 | RADF Hinge Spring Pressure Adjustment | | 1-118 | | | | | | | | | | | | | | | | | | | | |
| 47 | RADF Skew Adjustment | | 1-115 | | | | | | | | | | | | | | | | | | | | ○ |
| 48 | Drum count reset | | 1-31~32 | 25 | | | | | | | | | | | | | | | | | | ○ | |

* When adjustments must be made in order of precedence, numbers will be shown in circles.

Cautions: Printer control board replacement precautions

- When a damaged image control board is replaced, the memory board on this board must be used on the new image control board.
Only when the memory board is also damaged, use a new memory board on a new control board. Since the new memory board does not have adjustment data, the above adjustments are required. Before making the above adjustments, make the “47-92(output)” setting to make the new memory board effective.
- After making any adjustment, make the “47mode-96(output)” setting. After made the “47mode-96(output)” setting, the adjustment data is saved.
- However, the “47mode -92” and -96” settings are protected to prevent them from careless operation. In order to make “47mode -92” and -96” settings using the saved adjustment data, the protection must be disabled. For the unprotection method, contact the service manager of the authorized distributor.

LCD ADJUSTMENT

[1] Control Panel Adjustment

Enter the key operator mode and select "[F6] Control panel adjustment" to adjust the LCD touch panel.

*If you cannot select the touch panel adjustment mode after entering the key operator mode because the touch panel is displaced absolutely, press numeric keys to select "[F6] Control panel adjustment."

[2] Panel Contrast/Key Sound Adjustment

Enter the key operator mode and select "[F7] Panel contrast/Key sound adjustment" to adjust the contrast, backlight, and/or buzzer as desired.

[P] ADJUSTMENT

SETTINGS AND ADJUSTMENTS MADE WITH THE P FUNCTION

The P function allows you to perform following checks using the Utility button:

1. Total counter
 2. Copier counter
 3. Printer counter
 4. * PM counter
 5. Density Shift (Auto <Text/Photo>)
 6. Density Shift (Increase Contrast)
 7. Density Shift (Photo)
 8. Density Shift (Text)
- * PM counter is only displayed when **[1]** Check key is pressed on the counter list view screen.

[1] Checking and Printing the P Function

1. Turn ON the main switch.
2. Press the Utility button.
3. Counter list is displayed.
4. Press the **[COUNTER MENU]** key.
5. Press the **START** button to print out the counter list. The P function is cancelled automatically.
6. If the counter list need not be displayed, press the **[End]** button.

[2] Setting up the P Function

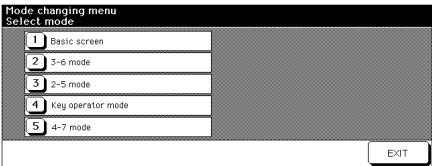
1. Turn ON the main switch.
2. Press the **[SPECIAL ORIGINAL]** button.
3. Press the original's image shift quality key to set the density shift, then press the Utility button.
4. Enter a value (0-5) with a numeric key, then press the **[OK]** key. The smaller the value, the darker the density.
5. Press the **[OK]** key to return to the Basic screen.

MODE CHANGING MENU

[1] Mode Selection

You can select a mode from the following [Mode changing menu: Select mode] without turning OFF and ON the power switch.

- [1] Basic screen
- [2] 3-6 mode
- [3] 2-5 mode
- [4] Key operation mode
- [5] 4-7 mode



| Step | Operation |
|------|---|
| 1 | Turn on the main power switch. |
| 2 | Press Utility button and wait until [Enter password for mode selection] message appears. |
| 3 | Enter the password 9272 and press the Copy button. Note that this password is fixed and can not be changed. The Mode changing menu appears. |
| 4 | Enter the number to select the desired mode. |
| 5 | To return to the [Mode changing menu], press Utility button and wait until the menu appears again. |
| 6 | Upon completion of the adjustment, press [EXIT] key to return to the Basic screen. |

25 MODE

[1] Selecting and Canceling the 25 Mode

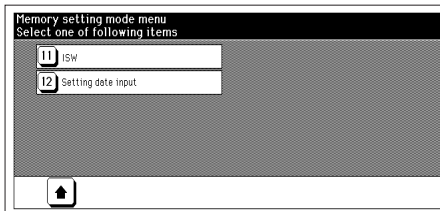
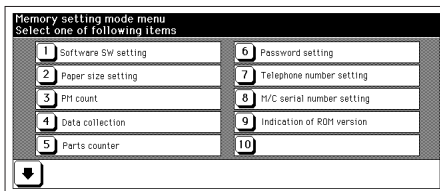
This machine has an adjustment mode called the “25 Mode.” Select this mode to rewrite data in the non-volatile memory or make various settings.

1. Turn OFF the main switch.
2. While pressing the copy quantity setting buttons 2 and 5, turn ON the main switch.

The 25 Mode Menu screen will appear.

Now the machine is in the 25 mode, disabling normal copy operations.

[25 Mode Menu screen]



3. Press the numeric button of the desired setting item.

The associated setting screen will appear.

4. Enter data in the setting screen.
5. Turning OFF the main switch cancels the 25 mode.
6. New data will take effect after restart.

[2] Setting Software DIP Switches

1. Procedure

Bring up the Software DIP SW Setting screen and set software DIP switches.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select [1] Software DIP SW setting. |
| 3 | [Software DIP SW Setting Screen] Select a DIP switch number. Use the [▲] or [▼] button at the left. To use numeric keys, invert the DIP switch number at the left before entering a DIP switch number. |
| 4 | Select a bit number of the selected DIP switch. Use the [▲] or [▼] button at the right. To use numeric keys, invert the bit number at the upper center before entering a DIP switch number. |
| 5 | Select ON (= 1) or OFF (= 0) of the switch. Use the [ON] or [OFF] button. Pressing the [ON] button turns ON the bit. Pressing the [OFF] button turns OFF the bit. |
| 6 | Press the [PREVIOUS SCREEN] button to return to the 25 Mode Menu screen. |

For functions of individual software DIP switches, see “List of Software Switches.”

25 ADJUSTMENT

< List of Software Switches >

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|--|------------------|------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW 1 | 0 | Condition for stopping copying after indication of toner supply | * 1 | * 1 | 1 | 1 | 1 |
| | 1 | Ditto | * 1 | * 1 | 0 | 0 | 0 |
| | 2 | Method for stopping copying after indication of toner supply | * 2 | * 2 | 1 | 1 | 1 |
| | 3 | Ditto | * 2 | * 2 | 0 | 0 | 0 |
| | 4 | Inhibition of copying when PM count is reached | Inhibited | Not inhibited | 0 | 0 | 0 |
| | 5 | Number of copies made before inhibition of copying | * 3 | * 3 | 0 | 0 | 0 |
| | 6 | Ditto | * 3 | * 3 | 0 | 0 | 0 |
| DIPSW2 | 7 | Ditto | * 3 | * 3 | 0 | 0 | 0 |
| | 0 | Hard disk connection | Disconnected | Connected | 0 | 0 | 0 |
| | 1 | Electrode cleaning cycle (when power is turned ON) | * 4 | * 4 | 0 | 0 | 0 |
| | 2 | Ditto | * 4 | * 4 | 0 | 0 | 0 |
| | 3 | Ditto | * 4 | * 4 | 0 | 0 | 0 |
| | 4 | Electrode cleaning cycle (after power is turned ON) | * 5 | * 5 | 0 | 0 | 0 |
| | 5 | Ditto | * 5 | * 5 | 0 | 0 | 0 |
| DIPSW3 | 6 | Blade automatic switching cycle | * 6 | * 6 | 0 | 0 | 0 |
| | 7 | Ditto | * 6 | * 6 | 0 | 0 | 0 |
| | 0 | — | — | — | 0 | 0 | 0 |
| | 1 | SC latch | Unlatched | Latched | 0 | 0 | 0 |
| | 2 | 25, 36, 47 mode password request (password: 9272) | Not requested | Requested | 0 | 0 | 0 |
| | 3 | Charging corona unit cleaning function | ON | Off | 0 | 0 | 0 |
| | 4 | Transfer /separation corona unit cleaning function | ON | Off | 0 | 0 | 0 |
| DIPSW4 | 5 | Movement of blade to transportation position (Note 1) | Disable | Enable | 0 | 0 | 0 |
| | 6 | 47 mode 15-01 data collection clearing | Disabled | Enabled | 0 | 0 | 0 |
| | 7 | JobEditor connection | Disconnected | Connected | 0 | 0 | 0 |
| | 0 | ADF automatic skew adjustment | Enabled | Disabled | 0 | 0 | 0 |
| | 1 | Inhibition of thick paper / double sided copy in thick2 paper mode | Disabled | Enabled | 0 | 0 | 0 |
| | 2 | Destination selection | * 7 | * 7 | 0 | 1 | 0 |
| | 3 | Ditto | * 7 | * 7 | 0 | 0 | 1 |
| | 4 | Key counter removal recovery | Disable | Enable | 0 | 0 | 0 |
| | 5 | Inhibition of magnified APS | Enabled | Disabled | 0 | 1 | 0 |
| | 6 | Fixed magnification rate setting change in key operator mode | Enabled | Disabled | 1 | 0 | 0 |
| | 7 | A3 (11 x 17) counting method | Incremented by 1 | Incremented by 2 | 0 | 0 | 0 |

Note 1: This bit is used to keep the cleaning blade off the drum to protect the drum and cleaning blade during transportation of the main body.

To keep the blade off the drum, set this DIP switch to 1, open the front door to turn OFF the interlock, and start up the 47 mode. The blade switching operation is performed at this time. If blade 1 is used, do not forget blade charge and 36 mode blade set mode at reinstallation. This DIPSW will be reset to 0 automatically.

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|---|------------------|----------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW5 | 0 | Toner concentration threshold | * 8 | * 8 | 0 | 0 | 0 |
| | 1 | Ditto | * 8 | * 8 | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | — | — | — | 0 | 0 | 0 |
| | 4 | 2 dot PWM density in photo mode | * 9 | * 9 | 0 | 0 | 0 |
| | 5 | Ditto | * 9 | * 9 | 1 | 1 | 1 |
| | 6 | — | — | — | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW 6 | 0 | Transfer/separation corona unit output for plain paper | * 10 | * 10 | 0 | 0 | 0 |
| | 1 | Ditto | * 10 | * 10 | 0 | 0 | 0 |
| | 2 | Ditto | * 10 | * 10 | 0 | 0 | 0 |
| | 3 | Transfer/separation corona unit output for thick paper | * 11 | * 11 | 0 | 0 | 0 |
| | 4 | Ditto | * 11 | * 11 | 0 | 0 | 0 |
| | 5 | Transfer/separation corona unit output for thin paper | * 12 | * 12 | 0 | 0 | 0 |
| | 6 | Ditto | * 12 | * 12 | 0 | 0 | 0 |
| | 7 | Potential control (Note 1) | Performed | Not performed | 0 | 0 | 0 |
| DIPSW 7 | 0 | — | — | — | — | — | — |
| | 1 | — | — | — | — | — | — |
| | 2 | — | — | — | — | — | — |
| | 3 | — | — | — | — | — | — |
| | 4 | — | — | — | — | — | — |
| | 5 | Transfer/separation corona unit output for recycled paper | * 13 | * 13 | 0 | 0 | 0 |
| | 6 | Ditto | * 13 | * 13 | 0 | 0 | 0 |
| | 7 | Ditto | * 13 | * 13 | 0 | 0 | 0 |
| DIPSW8 | 0 | Fixing temperature setting switchover | * 14 | * 14 | 0 | 0 | 0 |
| | 1 | Ditto | * 14 | * 14 | 0 | 0 | 0 |
| | 2 | Fixing roller initial rotation | * 15 | * 15 | 0 | 0 | 1 |
| | 3 | Ditto | * 15 | * 15 | 0 | 0 | 0 |
| | 4 | Fixing roller initial rotation time setting | * 16 | * 16 | 0 | 0 | 0 |
| | 5 | Ditto | * 16 | * 16 | 0 | 0 | 0 |
| | 6 | A3 (11x17) PM counter switch | 1 count | 2 count | 0 | 0 | 0 |
| | 7 | Store on hard disk | Enable | Disable | 0 | 0 | 0 |
| DIPSW 9 | 0 | Operation at key counter removal (copy) | Same as stop key | Immediate stop (jam) | 0 | 0 | 0 |
| | 1 | Operation at key counter removal (Pi6200) | Ignored | Same as DIPSW9-0 | 0 | 0 | 0 |
| | 2 | Message switching | * 17 | * 17 | 0 | 0 | 0 |
| | 3 | Ditto | * 17 | * 17 | 0 | 0 | 0 |
| | 4 | Copy count limit | * 18 | * 18 | 0 | 0 | 0 |
| | 5 | Ditto | * 18 | * 18 | 0 | 0 | 0 |
| | 6 | Ditto | * 18 | * 18 | 0 | 0 | 0 |
| | 7 | Ditto | * 18 | * 18 | 0 | 0 | 0 |

Note 1: This bit determines whether drum potential adjustment is to be made using a drum potential sensor. This setting is used to check whether an image problem has been caused by a faulty drum potential sensor.

25 ADJUSTMENT

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|--|------------------|-----------------------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW10 | 0 | Page memory allocation at job start | * 19 | * 19 | 0 | 0 | 0 |
| | 1 | Ditto | * 19 | * 19 | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | — | — | — | 0 | 0 | 0 |
| | 4 | — | — | — | 0 | 0 | 0 |
| | 5 | — | — | — | 0 | 0 | 0 |
| | 6 | — | — | — | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW11 | 0 | — | — | — | 0 | 0 | 0 |
| | 1 | — | — | — | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | SC/E code screen switchover | Switched | Not switched (All are F codes) | 0 | 0 | 0 |
| | 4 | Selection of filter for jagged edges on slanting lines | Not selected | Selected | 0 | 0 | 0 |
| | 5 | Image quality mode selection | * 20 | * 20 | 0 | 0 | 0 |
| | 6 | Ditto | * 20 | * 20 | 0 | 0 | 0 |
| DIPSW 12 | 7 | Jam indication screen type | Without jam code | With jam code | 0 | 0 | 0 |
| | 0 | Black stripe creation interval | Every 10 copies | Every 50 copies | 0 | 0 | 0 |
| | 1 | — | — | — | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | Printer automatic centering correction | Enable | Disable | 0 | 0 | 0 |
| | 4 | High voltage output in 36/47 mode | Not output | Output | 0 | 0 | 0 |
| | 5 | — | — | — | 0 | 0 | 0 |
| | 6 | — | — | — | 0 | 0 | 0 |
| DIPSW 13 | 7 | — | — | — | 0 | 0 | 0 |
| | 0 | Size detection 1 | A5 | 5.5 x 8.5 | 0 | 1 | 0 |
| | 1 | Size detection 2 | A4R | 8.5 x 11R | 0 | 1 | 0 |
| | 2 | Size detection 3 | 8.5 x 14 | F4 | 0 | 0 | 1 |
| | 3 | Size detection 4 | * 21 | * 21 | 0 | 0 | 0 |
| | 4 | Ditto | * 21 | * 21 | 0 | 1 | 0 |
| | 5 | F4 size detection | * 22 | * 22 | 0 | 0 | 0 |
| | 6 | Ditto | * 22 | * 22 | 0 | 0 | 0 |
| DIPSW 13 | 7 | — | — | — | 0 | 0 | 0 |

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|--|--------------------------------|----------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW14 | 0 | Size detection 5 (main unit) | B4 · 11 x 17/ B5 · 8.5 x 11 | 8K/16K | 0 | 0 | 0 |
| | 1 | — | — | — | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | Size detection 5 (by-pass feed) | B4 · 11 x 17/ B5 · 8.5 x 11 | 8K/16K | 0 | 0 | 0 |
| | 4 | Size detection 5 (platen) | B4 · 11 x 17/ B5 · 8.5 x 11 | 8K/16K | 0 | 0 | 0 |
| | 5 | Size detection 5 (ADF) | B4 · 11 x 17/ B5 · 8.5 x 11 | 8K/16K | 0 | 0 | 0 |
| | 6 | Size detection selection(PI) | B4 · 11 x 17/ B5 · 8.5 x 11 | 8K/16K | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW15 | 0 | — | — | — | 0 | 0 | 0 |
| | 1 | Maximum number of sheets that can be stapled | * 23 | * 23 | 0 | 0 | 0 |
| | 2 | Ditto | * 23 | * 23 | 0 | 0 | 0 |
| | 3 | FNS alarm stop SW | * 24 | * 24 | 0 | 0 | 0 |
| | 4 | Ditto | * 24 | * 24 | 0 | 0 | 0 |
| | 5 | KRDS modem connection recognition | Disconnect | Connect | 0 | 0 | 0 |
| | 6 | Dmax. value in printer mode | 1.43 | 1.35 | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW16 | 0 | Non-image area erasure method | Rectangular erasure | Tilted erasure | 1 | 0 | 0 |
| | 1 | Multi-job inhibition | Reservation enabled | Reservation disabled | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | C(K) counting in printer mode | Counted | Not counted | 0 | 0 | 0 |
| | 4 | TC start date indication (P mode) | Indicated | Not indicated | 0 | 0 | 0 |
| | 5 | Non-original area erasure mode judgement level | * 25 | * 25 | 0 | 0 | 0 |
| | 6 | Ditto | * 25 | * 25 | 0 | 0 | 0 |
| | 7 | Ditto | * 25 | * 25 | 0 | 0 | 0 |
| DIPSW17 | 0 | WT summer time setting | * 26 | * 26 | 0 | 0 | 0 |
| | 1 | Ditto | * 26 | * 26 | 1 | 1 | 1 |
| | 2 | Ditto | * 26 | * 26 | 1 | 1 | 1 |
| | 3 | Ditto | * 26 | * 26 | 0 | 0 | 0 |
| | 4 | Density selection for scanning tab paper | * 27 | * 27 | 0 | 0 | 0 |
| | 5 | Ditto | * 27 | * 27 | 0 | 0 | 0 |
| | 6 | Ditto | * 27 | * 27 | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW18 | 0 | Tray 1's faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 1 | Tray 2's faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 2 | Tray 3's faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 3 | Tray 4's (LCT's) faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 4 | ADF faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 5 | Folding, stapling and folding, trimmer faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 6 | PI faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |
| | 7 | Hard disk faulty part isolation | Normal | Unavailable | 0 | 0 | 0 |

25 ADJUSTMENT

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|---|---------------------------|-----------------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW 19 | 0 | — | — | — | — | — | — |
| | 1 | — | — | — | — | — | — |
| | 2 | — | — | — | — | — | — |
| | 3 | — | — | — | — | — | — |
| | 4 | — | — | — | — | — | — |
| | 5 | — | — | — | — | — | — |
| | 6 | — | — | — | — | — | — |
| | 7 | — | — | — | — | — | — |
| DIPSW20 | 0 | Group stapling | Disabled | Enabled | 0 | 0 | 0 |
| | 1 | Original size scanning with shift function (Note 1) | Normal | Original priority | 0 | 0 | 0 |
| | 2 | Stamp page number switching | Based on original | Based on transfer paper | 0 | 0 | 0 |
| | 3 | Keyboard layout | ABC layout | QWERTY layout | 0 | 0 | 0 |
| | 4 | Switching of transfer current with developing counter | Enabled | Disabled | 0 | 0 | 0 |
| | 5 | Maximum size of wide paper in subscanning direction of C-305L | 445mm | 459mm | 0 | 0 | 0 |
| | 6 | Scanner isolation | Not isolate | Isolate | 0 | 0 | 0 |
| | 7 | Tandem connection | Disconnected | Connected | 0 | 0 | 0 |
| DIPSW21 | 0 | Mixed sized print stapling inhibition | Enabled (realtime output) | Disabled (batch processing) | 0 | 0 | 0 |
| | 1 | LCT size setting in key operator mode | Disabled | Enabled | 0 | 0 | 0 |
| | 2 | Original count display | Displayed | Not displayed | 0 | 0 | 0 |
| | 3 | — | — | — | 0 | 0 | 0 |
| | 4 | — | — | — | 0 | 0 | 0 |
| | 5 | — | — | — | 0 | 0 | 0 |
| | 6 | — | — | — | 0 | 0 | 0 |
| | 7 | — | — | — | 0 | 0 | 0 |
| DIPSW22 | 0 | — | — | — | — | — | — |
| | 1 | — | — | — | — | — | — |
| | 2 | — | — | — | — | — | — |
| DIPSW 28 | 5 | — | — | — | — | — | — |
| | 6 | — | — | — | — | — | — |
| | 7 | — | — | — | — | — | — |

Note 1: When "Normal" is selected, the original size is compared with the copy paper size and the smaller one is assumed to be the image area size. When "Original priority" is selected, the original size is assumed to be the image area size only when the image shift mode is selected.

| DIPSW No. | Bit | Function | 0 | 1 | Initial Value | | |
|-----------|-----|--|---------------------|------------------------|---------------|---------------|--------|
| | | | | | Japan | North America | Europe |
| DIPSW29 | 0 | — | — | — | 0 | 0 | 0 |
| | 1 | — | — | — | 0 | 0 | 0 |
| | 2 | — | — | — | 0 | 0 | 0 |
| | 3 | — | — | — | 0 | 0 | 0 |
| | 4 | — | — | — | 0 | 0 | 0 |
| | 5 | — | — | — | 0 | 0 | 0 |
| | 6 | — | — | — | 0 | 0 | 0 |
| | 7 | SCSI parameter initialization when HDD is connected (Note 1) | Not initialized | Initialized | | | |
| DIPSW 30 | 0 | — | — | — | — | — | — |
| | 1 | 25 mode collection data 5-11 for checking | Display restriction | No display restriction | 0 | 0 | 0 |
| | 2 | — | — | — | — | — | — |
| | 3 | — | — | — | — | — | — |
| | 4 | — | — | — | — | — | — |
| | 5 | — | — | — | — | — | — |
| | 6 | — | — | — | — | — | — |
| | 7 | — | — | — | — | — | — |

Note 1: SCSI parameters must be initialized whenever an optional hard disk is connected. Setting this bit to “1” and turning the main switch to OFF resets the SCSI ID, data deletion cycle, and HDD management password. This DIPSW is automatically reset to “0” after completion of initialization.

25 ADJUSTMENT

- * 1 Condition for stopping copying after indication of toner supply request

| Mode | 1-1 | 1-0 |
|----------------------------------|-----|-----|
| Stops after printing 1500 copies | 0 | 0 |
| Stops after printing 3000 copies | 0 | 1 |
| Stops after printing 4000 copies | 1 | 0 |
| Stops after printing 5000 copies | 1 | 1 |

- * 2 Method for stopping copying after indication of toner supply request

| Mode | 1-3 | 1-2 |
|---|-----|-----|
| Stops after ejecting the paper remaining in the machine | 0 | 0 |
| Stops after printing specified number of copies | 0 | 1 |
| Stops at the end of the current job | 1 | 0 |
| Does not stop | 1 | 1 |

- * 3 Number of copies made before inhibition of copying

| Mode | 1-7 | 1-6 | 1-5 |
|--------------|-----|-----|-----|
| 1,000 copies | 0 | 0 | 0 |
| 2,000 copies | 0 | 0 | 1 |
| 3,000 copies | 0 | 1 | 0 |
| 4,000 copies | 0 | 1 | 1 |
| 5,000 copies | 1 | 0 | 0 |
| 1,000 copies | 1 | 0 | 1 |
| 1,000 copies | 1 | 1 | 0 |
| 1,000 copies | 1 | 1 | 1 |

- * 4 Electrode cleaning cycle (fixing temperature is 50°C or lower when power is turned ON)

| Mode | 2-3 | 2-2 | 2-1 |
|-------------------------|-----|-----|-----|
| When power is turned ON | 0 | 0 | 0 |
| 5,000 copies | 0 | 0 | 1 |
| 10,000 copies | 0 | 1 | 0 |
| 15,000 copies | 0 | 1 | 1 |
| 20,000 copies | 1 | 0 | 0 |
| 25,000 copies | 1 | 0 | 1 |
| 30,000 copies | 1 | 1 | 0 |
| Not cleaned | 1 | 1 | 1 |

- * 5 Electrode cleaning cycle (after power is turned ON)

| Mode | 2-5 | 2-4 |
|---------------|-----|-----|
| 20,000 copies | 0 | 0 |
| 30,000 copies | 0 | 1 |
| 40,000 copies | 1 | 0 |
| 50,000 copies | 1 | 1 |

- * 6 Blade automatic switching cycle

| Mode | 2-7 | 2-6 |
|----------------|-----|-----|
| 250,000 copies | 0 | 0 |
| 300,000 copies | 0 | 1 |
| 350,000 copies | 1 | 0 |
| 400,000 copies | 1 | 1 |

- * 7 Destination switchover

| Mode | 4-3 | 4-2 |
|--------|-----|-----|
| Japan | 0 | 0 |
| USA | 0 | 1 |
| Europe | 1 | 0 |

- * 8 Toner concentration threshold

This bit sets the read level of the toner concentration patch formed on the drum to determine the toner concentration. The setting can be made by shifting the threshold of black color to the positive or negative side.

- Standard -3 : The image becomes darker.
- Standard +3 : The image becomes lighter.
- Standard +5 : The image becomes far lighter.

| Mode | 5-1 | 5-0 |
|-------------|-----|-----|
| Standard | 0 | 0 |
| Standard -3 | 0 | 1 |
| Standard +3 | 1 | 0 |
| Standard +5 | 1 | 1 |

* 9 2 dot PWM table in photo mode

| Mode | 5-5 | 5-4 |
|-----------|-----|-----|
| 1 dot PWM | 0 | 0 |
| Table 1 | 0 | 1 |
| Table 2 | 1 | 0 |
| Table 3 | 1 | 1 |

* 10 Transfer/separation corona unit output for plain paper
This bit is used when "-----" "Normal," "Color," "Special," "HIGH Q," or "Seal" is selected for "Paper type/special size setting" in the key operator mode.

When "User paper" is selected with this bit, the transfer/separation corona unit output for the "user paper setting" made in the 36 mode is applied. When "No specification" is selected, the output data by destination (Japan, 64 g/m² plain paper; USA, 20 lb plain paper; Europe, 80 g/m² plain paper) is used.

| Mode | 6-2 | 6-1 | 6-0 |
|--|-----|-----|-----|
| No specification | 0 | 0 | 0 |
| 64 g/m ² plain paper (Japan) | 0 | 0 | 1 |
| 20 lb plain paper (USA) | 0 | 1 | 0 |
| 80 g/m ² plain paper (Europe) | 0 | 1 | 1 |
| Recycled paper 1 (Japan) | 1 | 0 | 0 |
| Recycled paper 2 (USA) | 1 | 0 | 1 |
| Recycled paper 3 (Europe) | 1 | 1 | 0 |
| User paper | 1 | 1 | 1 |

* 11 Transfer/separation corona unit output for thick paper
This bit is used when "Thick 1", "Thick 2" or "Tab paper" is selected for "Paper type/special size setting" in the key operator mode.

When "No specification" is selected, data for "Thick 1:170 g/m²" or "Thick 2:200 g/m²" is used (the data for "Thick 2" is also used for tab paper).

When other than "No specification" is selected, the selected output data is used for both "Thick 1" and "Thick 2."

| Mode | 6-4 | 6-3 |
|----------------------------|-----|-----|
| No specification | 0 | 0 |
| 200 g/m ² paper | 0 | 1 |
| 170 g/m ² paper | 1 | 0 |
| Postcard | 1 | 1 |

* 12 Transfer/separation corona unit output for thin paper
This bit is used when "Thin" is selected for "Paper type/special size setting" in the key operator mode.

When "No specification" is selected, the output data by destination (Japan, 52.4 g/m² paper; USA, 16 lb paper; Europe, 48 g/m² paper) is used.

| Mode | 6-6 | 6-5 |
|---------------------------------|-----|-----|
| No specification | 0 | 0 |
| 52.4 g/m ² paper | 0 | 1 |
| 48 g/m ² paper | 1 | 0 |
| 16 lb/80 g/m ² paper | 1 | 1 |

* 13 Transfer/separation corona unit output for recycled paper
This bit is used when "Recycle" is selected for "Paper type/special size setting" in the key operator mode.

When "User paper" is selected with this bit, the transfer/separation corona unit output for the user paper setting made in the 36 mode is applied. When "No specification" is selected, output data by destination (Japan, 64 g/m² standard paper; US, 20 lb standard paper; Europe, 80 g/m² standard paper) is used.

| Mode | 7-7 | 7-6 | 7-5 |
|--|-----|-----|-----|
| No specification | 0 | 0 | 0 |
| 64 g/m ² plain paper (Japan) | 0 | 0 | 1 |
| 20 lb plain paper (USA) | 0 | 1 | 0 |
| 80 g/m ² plain paper (Europe) | 0 | 1 | 1 |
| Recycled paper 1 (Japan) | 1 | 0 | 0 |
| Recycled paper 2 (USA) | 1 | 0 | 1 |
| Recycled paper 3 (Europe) | 1 | 1 | 0 |
| User paper | 1 | 1 | 1 |

* 14 Fixing temperature setting switchover

This bit is used to change the fixing temperature when fixing is insufficient or paper is curled largely. This setting is effective only for plain paper. It is not reflected in thick paper, thin paper, and preheat temperature.

- Standard: Standard setting
- Standard +5°C: Select this setting when fusion is insufficient.
- Standard -5°C: Select this setting when paper is curled largely.
- Standard -10°C: Select this setting when paper is curled far largely.

| Mode | 8-1 | 8-0 |
|----------------|-----|-----|
| Standard | 0 | 0 |
| Standard +5°C | 0 | 1 |
| Standard -5°C | 1 | 0 |
| Standard -10°C | 1 | 1 |

25 ADJUSTMENT

* 15 Fixing upper roller initial rotation

Fixing may be insufficient in the morning if the temperature of the place where the machine is installed is low. To prevent this, increase the warm-up time (fixing upper roller initial rotation time) to allow the fixing lower roller to be warmed up to the normal temperature. This bit specifies the condition(s) under which initial rotation of the fixing upper roller is required.

- Low temperature: Initial rotation of the fixing upper roller is carried out only under the low temperature condition.
- Low and normal temperatures: Initial rotation of the fixing upper roller is carried out under low and normal temperature conditions.
- Low, normal, and high temperatures: Initial rotation of the fixing upper roller is carried out under low, normal, and high temperature conditions.

| Destination | Mode | 8-3 | 8-2 |
|-------------|------------------------------------|-----|-----|
| Japan/US | Low temperature | 0 | 0 |
| Europe | Low and normal temperature | 1 | 0 |
| | Low, normal, and high temperatures | 1 | 1 |

* 16 Fixing roller initial rotation time setting

This bit sets the maximum time of initial rotation of the fixing roller. When 0 second is specified, initial rotation of the fixing roller is not carried out.

| Mode | 8-5 | 8-4 |
|------------|-----|-----|
| 60 seconds | 0 | 0 |
| 30 seconds | 0 | 1 |
| 15seconds | 1 | 0 |
| 0 second | 1 | 1 |

*17 Message switching

| Mode | 9-3 | 9-2 |
|----------------------------|-----|-----|
| Please insert key counter. | 0 | 0 |
| Please insert copy card. | 0 | 1 |
| Please insert coin. | 1 | 0 |
| Please insert key counter. | 1 | 1 |

* 18 Copy count limit

| Mode | 9-7 | 9-6 | 9-5 | 9-4 |
|-----------|-----|-----|-----|-----|
| No limit | 0 | 0 | 0 | 0 |
| 1 copy | 0 | 0 | 0 | 1 |
| 3 copies | 0 | 0 | 1 | 0 |
| 5 copies | 0 | 0 | 1 | 1 |
| 9 copies | 0 | 1 | 0 | 1 |
| 10 copies | 0 | 1 | 0 | 1 |
| 20 copies | 0 | 1 | 1 | 0 |
| 30 copies | 0 | 1 | 1 | 1 |
| 50 copies | 1 | 0 | 0 | 0 |
| 99 copies | 1 | 0 | 0 | 1 |
| No limit | 1 | 0 | 1 | 0 |
| No limit | 1 | 0 | 1 | 1 |
| No limit | 1 | 1 | 0 | 0 |
| No limit | 1 | 1 | 0 | 1 |
| No limit | 1 | 1 | 1 | 0 |
| No limit | 1 | 1 | 1 | 1 |

* 19 Page memory allocation at job start

| Mode | 10-1 | 10-0 |
|--------------------------|------|------|
| No allocation | 0 | 0 |
| 32 MB (default for DP75) | 0 | 1 |
| 64 MB | 1 | 0 |

* 20 Size detection 4

| Destination | Mode | 13-4 | 13-3 |
|--------------|------------|------|------|
| Japan/Europe | A5R | 0 | 0 |
| | B6R | 0 | 1 |
| USA | 5.5 x 8.5R | 1 | 0 |

* 21 F4 size detection

| Mode | 13-6 | 13-5 |
|---------------|------|------|
| 8 x 13 | 0 | 0 |
| 8.25 x 13 | 0 | 1 |
| 8.125 x 13.25 | 1 | 0 |
| 8 x 13 | 1 | 1 |

- * 22 Maximum number of sheets that can be stapled

| Mode | 15-2 | 15-1 |
|-----------|------|------|
| 50 sheets | 0 | 0 |
| 45 sheets | 0 | 1 |
| 40 sheets | 1 | 0 |
| 35 sheets | 1 | 1 |

- * 23 FNS alarm stop SW

| Mode | 15-4 | 15-3 |
|-------------------------------------|------|------|
| Stop immediately after detection | 0 | 0 |
| Stop at end of copy after detection | 0 | 1 |
| No alarm stop | 1 | 0 |
| No alarm stop | 1 | 1 |

- * 24 Selection of area to be erased in non-original area automatic erasure

This bit is used to make a setting associated with the non-original automatic erasure mode (application function).

1. Selection of the area to erase

There are two methods for selecting the area to be erased, "rectangular erasure" and "tilted erasure." Select the desired method.

- Tilted erasure: The original is not rectangular (e.g., circular original).

- Rectangular erasure: The original is rectangular (e.g., original of a standard size).

If a rectangular original is placed in a tilted position, black stripes may appear in the "rectangular erasure" mode. If there is a black area on the periphery of the original, this area may be judged as being outside the original, resulting in improper erasure of the area outside the original. In such a case, the "rectangular erasure" mode is selected automatically.

2. Selection of identification level

When the original is dark or external light (from the fluorescent lamp or sun) enters the machine, it becomes sometimes difficult to discriminate between the area inside the original and the area outside it. In such a case, the original area identification level can be changed.

Remarks:

In the key operator mode, you can use the memory switch that has a non-original area automatic erasure function. This memory switch allows you to select the area to be copied when copy paper is selected manually.

- To copy only image size area determined by the APS sensor, select "Erase the area outside the original."
- To copy the entire area of the original to the selected paper, select "Do not erase the area outside the original."

Note:

The APS sensor is effective if copy paper is selected manually.

| Mode | Area | 16-7 | 16-6 | 16-5 | 16-0 |
|--------------------------------|---------------------|------|------|------|------|
| Standard | Rectangular erasure | 0 | 0 | 0 | 0 |
| Dark original | Rectangular erasure | 0 | 0 | 1 | 0 |
| Darker original | Rectangular erasure | 0 | 1 | 0 | 0 |
| Interference light | Rectangular erasure | 0 | 1 | 1 | 0 |
| Coping with interference light | Rectangular erasure | 1 | 0 | 0 | 0 |
| Standard | Tilted erasure | 0 | 0 | 0 | 1 |
| Dark original | Tilted erasure | 0 | 0 | 1 | 1 |
| Darker original | Tilted erasure | 0 | 1 | 0 | 1 |
| Interference light | Tilted erasure | 0 | 1 | 1 | 1 |
| ADF shadow | Tilted erasure | 1 | 0 | 0 | 1 |

- * For rectangular original density (dark original / darker original)

Use this mode to set the density level threshold value to the dark when copying a news article on a newspaper.

(This mode is for copying a newspaper whose texture color is dark. Margin for interference light decreases.)

- * ADF shadow: Use this mode to set the density level threshold to the light side in order to prevent the ADF from being detected as an original when it is closed slightly. However, the inner area of an original may be mis-judged as the outer area and lineal image failure tends to occur.

- * Threshold for coping with interference light
Use this mode to increase the probability of copier to operate normal, when it is hard to prevent interference light penetrating to scan area, and when copying comparatively low density (bright texture color) original.

25 ADJUSTMENT

* 25 WT summer time setting

| Mode | 17-3 | 17-2 | 17-1 | 17-0 |
|-------------|------|------|------|------|
| 0 minutes | 0 | 0 | 0 | 0 |
| 10 minutes | 0 | 0 | 0 | 1 |
| 20 minutes | 0 | 0 | 1 | 0 |
| 30 minutes | 0 | 0 | 1 | 1 |
| 40 minutes | 0 | 1 | 0 | 0 |
| 50 minutes | 0 | 1 | 0 | 1 |
| 60 minutes | 0 | 1 | 1 | 0 |
| 70 minutes | 0 | 1 | 1 | 1 |
| 80 minutes | 1 | 0 | 0 | 0 |
| 90 minutes | 1 | 0 | 0 | 1 |
| 100 minutes | 1 | 0 | 1 | 0 |
| 110 minutes | 1 | 0 | 1 | 1 |
| 120 minutes | 1 | 1 | 0 | 0 |
| 130 minutes | 1 | 1 | 0 | 1 |
| 140 minutes | 1 | 1 | 1 | 0 |
| 150 minutes | 1 | 1 | 1 | 1 |

*26 Density selection for scanning tab paper

The higher the brightness level, the higher the density.

| Mode | 17-6 | 17-5 | 17-4 |
|-----------------------|------|------|------|
| 80 (brightness level) | 0 | 0 | 0 |
| 40 | 0 | 0 | 1 |
| 60 | 0 | 1 | 0 |
| 100 | 0 | 1 | 1 |
| 120 | 1 | 0 | 0 |
| 160 | 1 | 0 | 1 |
| 200 | 1 | 1 | 0 |
| 255 | 1 | 1 | 1 |

[3] Setting the Paper Size

When the LCT paper type is changed, it must be stored in the main unit. This setting is effective when an optional LCT is added.

Select a paper size among standard, non-standard paper sizes. After selecting a tray size, specify a paper size.

1. Setting the standard size

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " Paper size setting." |
| 3 | [Paper size setting mode] Press the [STD SIZE] key. |
| 4 | Press the or button to select a paper size. |
| 5 | Press the [OK] key to finish setting. To cancel the new setting, press the [CANCEL] key. Pressing either key will display the 25 Mode Menu screen again. |

2. Setting the non-standard size

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “ 2 Tray Size Setting.” |
| 3 | [Paper Size Setting Screen] Press the [Non STD size] key. |
| 4 | Press the key for specifying the main (vertical) scanning direction to display it in reverse video. |
| 5 | Press the [▲] or [▼] key or numeric keys to enter the size in the main (vertical) scanning direction. Max. 314 mm |
| 6 | Press the key for specifying the sub (horizontal) scanning direction to display it in reverse. |
| 7 | Press the [▲] or [▼] key or numeric keys to enter the size in the sub (horizontal) scanning direction. Max. 223 mm (C-305), 459 mm (C-305L) |
| 8 | Press the [OK] key to finish setting. To cancel the new setting, press the [CANCEL] key. Pressing either key will display the 25 Mode Menu screen again. |

3. Setting the wide paper

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Selection] Select 2 Paper size setting. |
| 3 | [Paper Size Setting Mode Screen] Press the [Wide size paper] key. |
| 4 | Press the [▲] or [▼] key to select a wide paper size. |
| 5 | Press the [Input size] key. |
| 6 | [Paper Size Input Screen] Press the key for specifying the main (vertical) scanning direction to display it in reverse. |
| 7 | Press the [▲] or [▼] key or numeric keys to enter the size in the main (vertical) scanning direction. Max. 314 mm |
| 8 | Press the button for specifying the sub (horizontal) scanning direction to display it in reverse. |
| 9 | Press the [▲] or [▼] key or numeric keys to enter the size in the sub (horizontal) scanning direction. Max. 223 mm (C-305), 459 mm (C-305L) |
| 10 | Press the [OK] key to finish setting. To cancel the new setting, press the [CANCEL] key. Pressing either key will display the 25 Mode Menu screen again. |

Reference 1:

Each time the current tray size is changed on this screen, the new setting will be written into the non-volatile memory.

25 ADJUSTMENT

[4] PM Count Resetting

Care should be taken not to reset the PM count by mistake.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “ 3 PM count.” |
| 3 | [PM count/cycle Screen] Press the COUNT RESET button. |
| 4 | [Reset Confirmation Screen] Press the YES button. The PM count is reset and the start date is input automatically. Pressing the NO button closes the Reset Confirmation screen at once. |
| 5 | Press the OK button to finish setting. To cancel the new setting, press the CANCEL button. Pressing either button will display the 25 Mode Menu screen again. |

[5] Setting the PM Cycle

This function allows you to change the PM cycle.

Caution: The PM cycle is factory-set. Use this function to change the factory-set PM cycle.

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “ 3 PM count.” |
| 3 | [PM count/cycle Screen] Press the PM CYCLE SET button. |
| 4 | After making sure that three digits of the cycle value are displayed in reverse video, enter a desired cycle value using numeric keys. Only the three digits of the cycle value can be entered. The entered digits will be shifted to the left one after another. |
| 5 | Press the OK button to finish setting. To cancel the new setting, press the CANCEL button. Pressing either button will display the 25 Mode Menu screen again. |

Blank page

25 ADJUSTMENT

[6] Collecting Data

This function allows you to view various data retained by the machine.

1. Data that can be Viewed

| No. | Data Type | Preparation |
|-----|----------------------------|--|
| 1 | Total count by paper size | Enter the 25 mode, select “ [1] Software DIP SW Setting,” and set bit 1 of DIP switch 30 to 1. (Note 1) |
| 2 | Copy count by paper size | |
| 3 | Print count by paper size | |
| 4 | ADF paper passage count | |
| 5 | Time series jam data | |
| 6 | Jam occurrence count | |
| 7 | Count by copy mode | |
| 8 | SC occurrence count | |
| 9 | Paper conveyance time data | |
| 10 | Local jam occurrence count | |
| 11 | Local SC occurrence count | |

Note : When bit 1 of DIP switch 30 is set to 0, only collected data 1 to collected data 4 can be viewed.

2. Viewing Collected Data 1 to Collected Data 4

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “ [4] Data Collection.” |
| 3 | Select the collected data you want to view by pressing one of numeric keys [1] to [4] . |
| 4 | [Individual Data View Screen] View the selected data by scrolling the screen using [↓] and [↑] keys. |
| 5 | Press the [PREVIOUS SCREEN] button to return to the 25 Mode Menu screen. |

3. Viewing Collected Data 5 to Collected Data 11

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “ [1] Software DIP SW Setting.” |
| 3 | [Software DIP SW Setting Screen] Set bit 1 of DIP switch 30 to 1. |
| 4 | Press the [PREVIOUS SCREEN] button to return to the 25 Mode Menu screen. |
| 5 | [25 Mode Menu Screen] Select “ [4] Data Collection.” |
| 6 | [Collected Data Selection Screen] Select the collected data you want to view by pressing one of numeric keys [5] to [11] . To select key [11] press the [↵] key. If the [↵] key is pressed with key [11] displayed, the Collected Data Selection screen containing keys [1] to [10] appears again. |
| 7 | [Individual Data View Screen] View the selected data by scrolling the screen using [↓] and [↑] keys. (Note 1) |
| 8 | Press the [PREVIOUS SCREEN] button to return to the 25 Mode Menu screen. |

Note : On the Individual Data View screen showing the local jam occurrence count (collected data **[10]**) or local SC occurrence count (collected data **[11]**), the **[COUNT RESET]** button appears. Pressing the **[COUNT RESET]** button resets the selected data count.

4. Details on Display Data

(1) Collecting data No.1 to No.3: Total/copy/print counts of each paper size

| NO | Destination | | | Maximum count | Remarks |
|----|-------------|---------|----------|---------------|------------------------------------|
| | Japan | U.S.A. | Europe | | |
| 1 | A2 | 17x22 | A2 | 99999999 | All counters are 8-digit counters. |
| 2 | A3 | 11x17 | A3 | 99999999 | |
| 3 | B4 | 8.5x14 | B4 (8K) | 99999999 | |
| 4 | A4 | 8.5x11 | A4 | 99999999 | |
| 5 | B5 | 5.5x8.5 | B5 (16K) | 99999999 | |
| 6 | A5 | — | A5 | 99999999 | |
| 7 | B6 | — | F4 | 99999999 | |
| 8 | 8.5x14 | — | — | 99999999 | |
| 9 | 8.5x11 | A4 | — | 99999999 | |
| 10 | Special | Special | Special | 99999999 | |

1. Each time a printed copy is ejected, the counter is incremented by 1 regardless of the paper size.
2. If the size of the paper used is none of the paper sizes 1-9 listed above, the counter is incremented in a special manner (SEF and LEF are counted assuming that they are of the same size.)

25 ADJUSTMENT

(2) Collecting data No.4: RADF mode

| NO | Items | Maximum count | Remarks |
|----|--|---------------|------------------------------------|
| 1 | Number of originals fed in ADF mode | 99999999 | All counters are 8-digit counters. |
| 2 | Number of originals fed in RADF mode | 99999999 | |
| 3 | Number of 1-sided SDF original fed | 99999999 | |
| 4 | Number of 2-sided SDF original fed | 99999999 | |
| 5 | Number of 1-sided mixed original fed | 99999999 | |
| 6 | Number of 2-sided mixed original fed | 99999999 | |
| 7 | Number of 1-sided Z-folded mode original fed | 99999999 | |
| 8 | Number of 2-sided Z-folded mode original fed | 99999999 | |
| 9 | Undefined | 99999999 | |
| 10 | Undefined | 99999999 | |
| 11 | Undefined | 99999999 | |
| 12 | Undefined | 99999999 | |
| 13 | Undefined | 99999999 | |
| 14 | Undefined | 99999999 | |
| 15 | Undefined | 99999999 | |
| 16 | Undefined | 99999999 | |

1. The counter is incremented each time one original side has been scanned in each mode.
2. Counters 1 and 2 count original sides independently of counters 3-8.

(3) Collecting data No.5: JAM data of time series

A jam code, total count, date and time of occurrence, tray type, paper size, and magnification can be displayed for the latest 100 jams.

(4) Collecting data No.6: JAM count / Collecting data No.10: JAM count of each section

| NO | Description of jam | | Jam position display on operation panel | Maximum count | Counting condition |
|----|---|---|---|---------------|------------------------------------|
| | Location of jam | Code displayed when display of jam code is selected by 25-mode DIP switch | | | |
| 1 | By-pass paper feed | 10-1 | 5 | 999999 | All counters are 6-digit counters. |
| 2 | By-pass paper feed | 10-2 | 5 | 999999 | |
| 3 | Tray 1 paper feed | 11-1 | 1 | 999999 | |
| 4 | Tray 1 paper feed | 11-2 | 1 | 999999 | |
| 5 | Tray 2 paper feed | 12-1 | 2 | 999999 | |
| 6 | Tray 2 paper feed | 12-2 | 2 | 999999 | |
| 7 | Tray 3 paper feed | 13-1 | 3 | 999999 | |
| 8 | Tray 3 paper feed | 13-2 | 3 | 999999 | |
| 9 | Tray 4 (LCT) | 14-1 | 4 | 999999 | |
| 10 | Tray 4 (LCT) | 14-2 | 4 | 999999 | |
| 11 | Paper feed conveyance (common to all trays) | 17-1 | 8 | 999999 | |
| 12 | Paper feed conveyance (tray 1) | 17-2 | 6 | 999999 | |
| 13 | Paper feed conveyance (tray 2/3) | 17-3 | 6 | 999999 | |
| 14 | Paper feed conveyance (tray 2) | 17-4 | 6 | 999999 | |
| 15 | Paper feed conveyance (tray 3) | 17-5 | 6 | 999999 | |
| 16 | Paper feed conveyance (LCT) | 17-6 | 7 | 999999 | |
| 17 | Drum | 21-1 | 9 | 999999 | |
| 18 | Second paper feed conveyance | 31-1 | 8 | 999999 | |
| 19 | Second paper feed conveyance | 31-2 | 9 | 999999 | |
| 20 | Fixing unit /exit (straight ejection) | 32-1 | 10 | 999999 | |
| 21 | Fixing unit /exit (reverse and eject ADU) | 32-2 | 10 | 999999 | |
| 22 | Fixing unit exit (reverse and eject) | 32-3 | 10 | 999999 | |
| 23 | Fixing unit exit (reverse and eject) | 32-4 | 10 | 999999 | |
| 24 | Fixing unit /exit | 32-5 | 10 | 999999 | |
| 25 | ADU inlet paper conveyance | 92-1 | 12 | 999999 | |
| 26 | ADU inlet paper conveyance | 92-2 | 11 | 999999 | |
| 27 | ADU paper reversal and conveyance | 93-1 | 12 | 999999 | |
| 28 | ADU exit paper conveyance | 94-1 | 12 | 999999 | |
| 29 | ADU exit paper conveyance | 94-2 | 12 | 999999 | |
| 30 | Vertical paper conveyance jam access door | 19-1 | 6 | 999999 | |
| 31 | LCT side door | 19-2 | 6 | 999999 | |
| 32 | Front door | 51-1 | 8 | 999999 | |
| 33 | Finisher door | 71-1 | 13 | 999999 | |
| 34 | ADF | 62-1 | 14 | 999999 | |
| 35 | ADF | 62-2 | 14 | 999999 | |
| 36 | ADF | 62-3 | 14 | 999999 | |

25 ADJUSTMENT

| NO | Description of jam | | Jam position display on operation panel | Maximum count | Counting condition |
|----|--------------------|---|---|---------------|--------------------|
| | Location of jam | Code displayed when display of jam code is selected by 25-mode DIP switch | | | |
| 37 | ADF | 62-4 | 14 | 999999 | |
| 38 | ADF | 62-5 | 14 | 999999 | |
| 39 | ADF | 62-6 | 14 | 999999 | |
| 40 | ADF | 62-7 | 14 | 999999 | |
| 41 | ADF | 62-8 | 14 | 999999 | |
| 42 | ADF | 62-9 | 14 | 999999 | |
| 43 | ADF | 62-10 | 14 | 999999 | |
| 44 | ADF | 63-1 | 15 | 999999 | |
| 45 | ADF | 63-2 | 15 | 999999 | |
| 46 | ADF | 63-3 | 15 | 999999 | |
| 47 | ADF | 63-4 | 15 | 999999 | |
| 48 | ADF | 63-5 | 15 | 999999 | |
| 49 | ADF | 63-6 | 15 | 999999 | |
| 50 | ADF | 63-7 | 15 | 999999 | |
| 51 | ADF | 63-8 | 15 | 999999 | |
| 52 | ADF | 63-9 | 15 | 999999 | |
| 53 | ADF | 63-10 | 15 | 999999 | |
| 54 | ADF | 63-11 | 15 | 999999 | |
| 55 | ADF | 61-1 | - | 999999 | |
| 56 | ADF | 61-2 | - | 999999 | |
| 57 | FNS | 72-16 | 13 | 999999 | |
| 58 | FNS | 72-17 | 13 | 999999 | |
| 59 | FNS | 72-18 | 13 | 999999 | |
| 60 | FNS | 72-19 | 13 | 999999 | |
| 61 | FNS | 72-20 | 13 | 999999 | |
| 62 | FNS | 72-21 | 13 | 999999 | |
| 63 | FNS | 72-22 | 17 | 999999 | |
| 64 | FNS | 72-23 | 17 | 999999 | |
| 65 | FNS | 72-24 | 18 | 999999 | |
| 66 | FNS | 72-25 | 18 | 999999 | |
| 67 | FNS | 72-26 | 18 | 999999 | |
| 68 | FNS | 72-27 | 13 | 999999 | |
| 69 | FNS | 72-28 | 13 | 999999 | |
| 70 | FNS | 72-29 | 13 | 999999 | |
| 71 | FNS | 72-30 | 13 | 999999 | |
| 72 | FNS | 72-32 | 18 | 999999 | |
| 73 | FNS | 72-33 | 18 | 999999 | |
| 74 | FNS | 72-34 | 18 | 999999 | |
| 75 | PI | 72-35 | 17 | 999999 | |
| 76 | PI | 72-36 | 17 | 999999 | |
| 77 | PI | 72-37 | 17 | 999999 | |
| 78 | FNS | 72-81 | 13 | 999999 | |
| 79 | FNS | 72-82 | 13 | 999999 | |
| 80 | FNS | 72-83 | 13 | 999999 | |

1. When a jam occurs, the associated counter is incremented by 1 (Static jams are not counted.)

(5) Collecting Data No.7:Count of each copy mode

| NO | Item | Maximum count | Counting condition |
|----|-------------------------------------|---------------|------------------------------------|
| 1 | 1-1 mode | 99999999 | All counters are 8-digit counters. |
| 2 | 1-2 mode | 99999999 | |
| 3 | 2-1 mode | 99999999 | |
| 4 | 2-2 mode | 99999999 | |
| 5 | ADF1-1 mode | 99999999 | |
| 6 | ADF1-2 mode | 99999999 | |
| 7 | Mixed original mode | 99999999 | |
| 8 | SDF mode | 99999999 | |
| 9 | Z-fold original mode | 99999999 | |
| 10 | Normal | 99999999 | |
| 11 | HIGH | 99999999 | |
| 12 | VERY HIGH | 99999999 | |
| 13 | 600 dpi | 99999999 | |
| 14 | Auto (text/photo) | 99999999 | |
| 15 | Text | 99999999 | |
| 16 | Photo | 99999999 | |
| 17 | Increase Contrast | 99999999 | |
| 18 | Non STD size | 99999999 | |
| 19 | 1 oblique staple (Up. Left/Normal) | 99999999 | |
| 20 | 1 oblique staple (Up. Right/Normal) | 99999999 | |
| 21 | 1 oblique staple (Up. Left/Rev.) | 99999999 | |
| 22 | 1 oblique staple (Up. Right/Rev.) | 99999999 | |
| 23 | 2 parallel staples (Left/Normal) | 99999999 | |
| 24 | 2 parallel staples (Upper/Normal) | 99999999 | |
| 25 | 2 parallel staples (Left/Rev.) | 99999999 | |
| 26 | 2 parallel staples (Upper/Rev.) | 99999999 | |
| 27 | Stapling and Folding | 99999999 | |
| 28 | Folding | 99999999 | |
| 29 | Main tray: Group | 99999999 | |
| 30 | Main tray: Sort | 99999999 | |
| 31 | Main tray: Non sort | 99999999 | |
| 32 | Sub-tray: Group (FACE DOWN) | 99999999 | |
| 33 | Sub-tray: Group (FACE UP) | 99999999 | |
| 34 | Sub-tray: Sort (FACE DOWN) | 99999999 | |
| 35 | Sub-tray: Sort (FACE UP) | 99999999 | |
| 36 | Sub-tray: Non sort (FACE DOWN) | 99999999 | |
| 37 | Sub-tray: Non sort (FACE UP) | 99999999 | |
| 38 | Cover sheet | 99999999 | |
| 39 | Trimmer | 99999999 | |
| 40 | Real size copy | 99999999 | |
| 41 | Preset magnification E4 | 99999999 | |
| 42 | Preset magnification E3 | 99999999 | |

25 ADJUSTMENT

| NO | Item | Maximum count | Counting condition |
|----|---------------------------------------|---------------|------------------------------------|
| 43 | Preset magnification E2 | 99999999 | All counters are 8-digit counters. |
| 44 | Preset magnification E1 | 99999999 | |
| 45 | Preset magnification R4 | 99999999 | |
| 46 | Preset magnification R3 | 99999999 | |
| 47 | Preset magnification R2 | 99999999 | |
| 48 | Preset magnification R1 | 99999999 | |
| 49 | User lens mode 1 | 99999999 | |
| 50 | User lens mode 2 | 99999999 | |
| 51 | User lens mode 3 | 99999999 | |
| 52 | Zoom | 99999999 | |
| 53 | Vertical/Horizontal Zoom | 99999999 | |
| 54 | Maximum Zoom | 99999999 | |
| 55 | Minimum Zoom | 99999999 | |
| 56 | APS | 99999999 | |
| 57 | AMS | 99999999 | |
| 58 | AE | 99999999 | |
| 59 | User density level 1 | 99999999 | |
| 60 | User density level 2 | 99999999 | |
| 61 | Interrupted copy | 99999999 | |
| 62 | Automatic image rotation cancellation | 99999999 | |
| 63 | Sheet/cover interleave | 99999999 | |
| 64 | Chapter control | 99999999 | |
| 65 | Combination | 99999999 | |
| 66 | Booklet copy | 99999999 | |
| 67 | OHP interleave (copy) | 99999999 | |
| 68 | OHP interleave (blank) | 99999999 | |
| 69 | Image insert | 99999999 | |
| 70 | Dual Page | 99999999 | |
| 71 | Program job | 99999999 | |
| 72 | Non-image area erase | 99999999 | |
| 73 | Reverse image | 99999999 | |
| 74 | Auto repeat | 99999999 | |
| 75 | Manual repeat | 99999999 | |
| 76 | STD size repeat | 99999999 | |
| 77 | Frame erasure | 99999999 | |
| 78 | Fold erasure | 99999999 | |
| 79 | Auto Layout | 99999999 | |
| 80 | Full-image Area | 99999999 | |
| 81 | Image Shift | 99999999 | |
| 82 | Reduction shift | 99999999 | |
| 83 | Overlay | 99999999 | |
| 84 | Water mark | 99999999 | |
| 85 | Stamp | 99999999 | |
| 86 | Date / Time | 99999999 | |
| 87 | Page | 99999999 | |

| NO | Item | Maximum count | Counting condition |
|----|---------------------------------|---------------|--|
| 88 | Numbering | 99999999 | |
| 89 | Set quantity 1 | 99999999 | |
| 90 | Set quantity 2-5 | 99999999 | |
| 91 | Set quantity 6-10 | 99999999 | |
| 92 | Set quantity 11 or more | 99999999 | |
| 93 | Time while power remote 1 is on | 99999999 | Total period of time during which image control board is energized (remote power supply 1 is ON). 1 is counted per minute. This value is written into non-volatile memory at power-off. |
| 94 | Time while power remote 2 is on | 99999999 | Total period of time during which remote power supply 2 is ON. 1 is counted per minute. This value is written into non-volatile memory when image control is turned OFF. |
| 95 | Time while power remote 3 is on | 99999999 | Total period of time during which remote power supply 2 is ON and 24 V relay is ON. The count is incremented by 1 per minute. This value is written into non-volatile memory when image control is turned OFF. |
| 96 | Time while power remote 4 is on | 99999999 | Total period of time during which remote power supply 3 is ON. The count is incremented by 1 per minute. This value is written into non-volatile memory when image control is turned OFF. |
| 97 | Time during low power mode | 99999999 | Total period of time during which low power mode is selected. The count is incremented by 1 per minute. |

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| NO | Item | Maximum count | Counting condition |
|-----|----------------------------------|---------------|---|
| 98 | Time during warm up time | 99999999 | Total period of time during which fixing unit heater is ON when machine is not ready for fusing. The count is incremented by 1 per second. |
| 99 | Time during front door open | 99999999 | Total period of time during which front door is open. The count is incremented by 1 per second. |
| 100 | Ope. time in 1side straight exit | 99999999 | Total time from start to end of printing. The count is incremented by 1 per second. Data is output per minute. (Halt time (machine is not operational due to jam, etc.) is excluded.) |
| 101 | Ope. time in 1side reverse exit | 99999999 | Total time from start to end of printing. The count is incremented by 1 per second. Data is output per minute. (Halt time (machine is not operational due to jam, etc.) is excluded.) |
| 102 | Operation time in 2side print | 99999999 | Total time from start to end of printing. The count is incremented by 1 per second. Data is output per minute. (Halt time (machine is not operational due to jam, etc.) is excluded.) |
| 103 | Operation time in ADF mode | 99999999 | Total operation time of ADF. The count is incremented by 1 per second. |
| 104 | Morning correction count | 99999999 | The count is incremented by 1 each time correction is made before starting work in the morning. |

| NO | Item | Maximum count | Counting condition |
|-----|-------------------------------------|---------------|---|
| 105 | Time during APS sensor on | 99999999 | Total period of time during which APS sensor is ON. The count is incremented by 1 per second. Data is output per minute.. |
| 106 | N of main tray used jobs | 99999999 | Job count |
| 107 | N of sub tray tray used jobs | 99999999 | Job count |
| 108 | N of stapling folding used jobs | 99999999 | Job count |
| 109 | N of folding jobs | 99999999 | Job count |
| 110 | N of ADF NF occurred | 99999999 | |
| 111 | N of special error1 occurred | 99999999 | Original size detection error occurrence count |
| 112 | N of special error2 occurred | 99999999 | Next original information error occurrence count |
| 113 | N of special error3 occurred | 99999999 | Mixed loading prohibited original size error occurrence count |
| 114 | N of Scanner scanned | 99999999 | The count is incremented by 1 each time Platen Mode Copy button is pressed. |
| 115 | N of electrocle cleaned | 99999999 | |
| 116 | N of memory overflow | 99999999 | |
| 117 | N of fixing alarm occurred | 99999999 | |
| 118 | N of no toner stop occurred | 99999999 | |
| 119 | N of AGC rerty | 99999999 | |
| 120 | N of sub scan beam correct error | 99999999 | |
| 121 | N of mis-centering correct error | 99999999 | |
| 122 | N of ADF distortion adjust error | 99999999 | |
| 123 | N of ADF distortion data error | 99999999 | |
| 124 | Compression memory overflow | 99999999 | |
| 125 | Page memory overflow (scan) | 99999999 | |
| 126 | Page memory overflow (print) | 99999999 | |
| 127 | FNS alarm (tray/trimming) | 99999999 | |
| 128 | FNS alarm (staple) | 99999999 | |
| 129 | Scanner count | 99999999 | |
| 130 | N of ADF special error 4 occurred | 99999999 | |
| 131 | Store for HDD (Sync. with Copying) | 99999999 | |
| 132 | Store for HDD (SRV mode scan-> HDD) | 99999999 | |
| 133 | Store for PC (SRV mode scan-> HDD) | 99999999 | |
| 134 | Store for PC (SRV mode HDD-> PC) | 99999999 | |
| 135 | Recall from HDD (SRV mode HDD) | 99999999 | |
| 136 | Recall from PC (SRV mode PC) | 99999999 | |
| 137 | Image edit count by SRV | 99999999 | |

25 ADJUSTMENT

| NO | Item | Maximum count | Counting condition |
|-----|---------------------------|------------------|--------------------|
| 138 | Wide paper count (A3W) | 99999999 | |
| 139 | Wide paper count (A4W) | 99999999 | |
| 140 | Wide paper count (A4RW) | 99999999 | |
| 141 | Wide paper count (A5W) | 99999999 | |
| 142 | Wide paper count (Others) | 99999999 | |

(6) Collecting data No.8: SC count / Collecting data No.11: SC count of each section

| NO | Toruble code | | Description | Maximum count | Remarks |
|----|--------------|----|--|---------------|-----------------------------------|
| 1 | 13 | 1 | Paper feed MT EM | 9999 | All counters are 4-digit counters |
| 2 | 13 | 2 | LCT conveyance MT EM | 9999 | |
| 3 | 13 | 3 | Loop roller motor fuse blowing | 9999 | |
| 4 | 18 | 11 | Tray 1 up error 1 | 9999 | |
| 5 | 18 | 12 | Tray 1 up error 2 | 9999 | |
| 6 | 18 | 13 | Tray 1 up error 3 | 9999 | |
| 7 | 18 | 10 | Tray 1 up MT EM | 9999 | |
| 8 | 18 | 21 | Tray 2 up error 1 | 9999 | |
| 9 | 18 | 22 | Tray 2 up error 2 | 9999 | |
| 10 | 18 | 23 | Tray 2 up error 3 | 9999 | |
| 11 | 18 | 20 | Tray 2 up MT EM | 9999 | |
| 12 | 18 | 31 | Tray 3 up error 1 | 9999 | |
| 13 | 18 | 32 | Tray 3 up error 2 | 9999 | |
| 14 | 18 | 33 | Tray 3 up error 3 | 9999 | |
| 15 | 18 | 30 | Tray 3 up MT EM | 9999 | |
| 16 | 18 | 41 | LCT up/down error 1 | 9999 | |
| 17 | 18 | 42 | LCT up/down error 2 | 9999 | |
| 18 | 18 | 43 | LCT up/down error 3 | 9999 | |
| 19 | 18 | 40 | LCT up/down MT EM | 9999 | |
| 20 | 18 | 51 | By-pass tray up error 1 | 9999 | |
| 21 | 18 | 52 | By-pass tray up error 2 | 9999 | |
| 22 | 18 | 53 | By-pass tray up error 3 | 9999 | |
| 23 | 21 | 1 | Charging corona unit cleaning MT error 1 | 9999 | |
| 24 | 21 | 2 | Charging corona unit cleaning MT error 2 | 9999 | |
| 25 | 21 | 3 | Charging corona unit cleaning MT error 3 | 9999 | |
| 26 | 21 | 4 | Transfer/separation corotron wire | 9999 | |
| 27 | 21 | 5 | Transfer/separation corona unit | 9999 | |
| 28 | 21 | 6 | Transfer/separation corona unit | 9999 | |
| 29 | 23 | 1 | Toner bottle MT EM | 9999 | |
| 30 | 23 | 2 | Developing MT EM | 9999 | |
| 31 | 23 | 3 | Blade motor excessive current deteciton | 9999 | |
| 32 | 23 | 4 | Drum ready 1 | 9999 | |
| 33 | 23 | 5 | Drum ready 2 | 9999 | |
| 34 | 23 | 6 | Drum ready 3 | 9999 | |
| 35 | 23 | 7 | Blade ready 1 | 9999 | |
| 36 | 23 | 8 | Blade ready 2 | 9999 | |
| 37 | 23 | 9 | Blade ready 3 | 9999 | |
| 38 | 23 | 10 | Drum ready 2 | 9999 | |
| 39 | 23 | 11 | Toner screw motor fuse blowing | 9999 | |
| 40 | 24 | 1 | Drum temperature sensor break detection | 9999 | |

25 ADJUSTMENT

| NO | Toruble code | | Description | Maximum count | Remarks |
|----|--------------|----|--|---------------|---------|
| 41 | 24 | 2 | Drum temperature sensor grounding | 9999 | |
| 42 | 24 | 3 | Drum heater open detection 1 | 9999 | |
| 43 | 24 | 4 | Drum heater open error detection 2 | 9999 | |
| 44 | 28 | 1 | Charging EM | 9999 | |
| 45 | 28 | 2 | Transfer EM | 9999 | |
| 46 | 28 | 3 | Separation EM | 9999 | |
| 47 | 28 | 4 | High-voltage 24 V fuse blowing | 9999 | |
| 48 | 29 | 1 | Maximum density correction error 1 | 9999 | |
| 49 | 29 | 2 | Maximum density correction error 2 | 9999 | |
| 50 | 29 | 3 | Maximum density correction error 3 | 9999 | |
| 51 | 29 | 4 | γ correction error 1 | 9999 | |
| 52 | 29 | 5 | γ correction error 2 | 9999 | |
| 53 | 29 | 6 | γ correction error 3 | 9999 | |
| 54 | 29 | 7 | Dot diameter correction error 1 | 9999 | |
| 55 | 29 | 8 | Dot diameter correction error 2 | 9999 | |
| 56 | 29 | 9 | Potential correction error 1 | 9999 | |
| 57 | 29 | 10 | Potential correction error 2 | 9999 | |
| 58 | 29 | 11 | Potential correction error 3 | 9999 | |
| 59 | 29 | 12 | Transfer adjustment error | 9999 | |
| 60 | 29 | 13 | Separation AC adjustment error | 9999 | |
| 61 | 29 | 14 | Separation DC adjustment error | 9999 | |
| 62 | 29 | 15 | Developing bias adjustment error | 9999 | |
| 63 | 32 | 1 | Suction fan MT EM1 | 9999 | |
| 64 | 32 | 2 | Suction fan MT EM2 | 9999 | |
| 65 | 32 | 3 | Suction fan MT EM3 | 9999 | |
| 66 | 32 | 4 | Fixing unit cooling fan MT EM1 | 9999 | |
| 67 | 32 | 5 | Fixing unit cooling fan MT EM2 | 9999 | |
| 68 | 32 | 6 | Fixing unit cooling fan MT EM3 | 9999 | |
| 69 | 32 | 7 | Fixing unit cooling fan MT EM4 | 9999 | |
| 70 | 33 | 1 | Second paper feed MT EM | 9999 | |
| 71 | 33 | 2 | Paper reverse and eject motor fuse blowing | 9999 | |
| 72 | 33 | 3 | Pre-transfer R-motor fuse blowing | 9999 | |
| 73 | 33 | 4 | Ejection motor fuse blowing | 9999 | |
| 74 | 33 | 5 | Web motor fuse blowing detection 1 | 9999 | |
| 75 | 33 | 6 | Web motor fuse blowing detection 2 | 9999 | |
| 76 | 34 | 1 | Fixing upper roller high temperature error detection | 9999 | |
| 77 | 34 | 2 | Fixing heat roller high temperature error detection | 9999 | |

| NO | Toruble code | | Description | Maximum count | Remarks |
|-----|--------------|----|--|---------------|---------|
| 78 | 34 | 3 | Fixing upper roller high temperature error detection | 9999 | |
| 79 | 34 | 4 | Fixing heat roller high temperature error detection | 9999 | |
| 80 | 35 | 1 | Fixing upper roller low temperature error detection | 9999 | |
| 81 | 35 | 2 | Fixing heat roller low temperature error detection | 9999 | |
| 82 | 36 | 1 | Fixing upper roller sensor error detection | 9999 | |
| 83 | 36 | 2 | Fixing heat roller sensor error detection | 9999 | |
| 84 | 36 | 3 | Fixing upper roller sensor error | 9999 | |
| 85 | 36 | 4 | Fixing heat roller sensor error | 9999 | |
| 86 | 36 | 5 | Fixing upper roller S2 error detection | 9999 | |
| 87 | 36 | 6 | Fixing heat roller S4 error detection | 9999 | |
| 88 | 41 | 1 | Optics unit HP return error 1 | 9999 | |
| 89 | 41 | 2 | Optics unit HP return error 2 | 9999 | |
| 90 | 41 | 3 | Optics unit HP return error 3 | 9999 | |
| 91 | 41 | 4 | Optics unit HP return error 4 | 9999 | |
| 92 | 41 | 5 | Optics unit HP return error 5 | 9999 | |
| 93 | 41 | 6 | Optics unit HP return error 6 | 9999 | |
| 94 | 41 | 7 | Right overrun error 1 | 9999 | |
| 95 | 41 | 8 | Right overrun error 2 | 9999 | |
| 96 | 41 | 9 | Left overrun error | 9999 | |
| 97 | 41 | 10 | Polygon mirror MT error 1 | 9999 | |
| 98 | 41 | 11 | Polygon mirror MT error 2 | 9999 | |
| 99 | 42 | 1 | Optics unit cooling fan MT EM1 | 9999 | |
| 100 | 42 | 2 | Optics unit cooling fan MT EM2 | 9999 | |
| 101 | 42 | 3 | Optics unit cooling fan MT EM3 | 9999 | |
| 102 | 42 | 4 | Write unit cooling fan MT EM1 | 9999 | |
| 103 | 42 | 5 | Write unit cooling fan MT EM2 | 9999 | |
| 104 | 42 | 6 | Write unit cooling fan MT EM3 | 9999 | |
| 105 | 42 | 7 | Write unit cooling fan MT EM4 | 9999 | |
| 106 | 46 | 1 | APC error | 9999 | |
| 107 | 46 | 2 | Scanner FIFO error | 9999 | |
| 108 | 46 | 3 | Printer FIFO error | 9999 | |
| 109 | 46 | 5 | Compressed input/output FIFO error | 9999 | |
| 110 | 46 | 6 | Expansion error | 9999 | |
| 111 | 46 | 8 | Index sensor error | 9999 | |
| 112 | 46 | 10 | No margin of scanner control | 9999 | |
| 113 | 46 | 11 | No margin of printer control | 9999 | |
| 114 | 46 | 12 | SVV length error | 9999 | |
| 115 | 46 | 13 | Scanner time-out | 9999 | |
| 116 | 46 | 14 | Printer time-out | 9999 | |

25 ADJUSTMENT

| NO | Toruble code | | Description | Maximum count | Remarks |
|-----|--------------|----|--|---------------|---------|
| 117 | 46 | 15 | Expansion device access error | 9999 | |
| 118 | 46 | 16 | Compression device access error | 9999 | |
| 119 | 46 | 17 | Filter factor error | 9999 | |
| 120 | 46 | 19 | Memory in data flow | 9999 | |
| 121 | 46 | 21 | Data flow memory mode | 9999 | |
| 122 | 46 | 23 | SVV off error | 9999 | |
| 123 | 46 | 24 | Black/white collection error | 9999 | |
| 124 | 46 | 25 | Level adjustment error | 9999 | |
| 125 | 46 | 26 | Invalid correction data by resolution | 9999 | |
| 126 | 46 | 27 | Density conversion (γ curve generation error) | 9999 | |
| 127 | 46 | 28 | PWM (γ curve generation error) | 9999 | |
| 128 | 46 | 80 | Insufficient/broken message queue | 9999 | |
| 129 | 46 | 81 | Invalid message or method parameter | 9999 | |
| 130 | 46 | 82 | Invalid task | 9999 | |
| 131 | 46 | 83 | Invalid event | 9999 | |
| 132 | 46 | 90 | Memory access error | 9999 | |
| 133 | 46 | 91 | Header access error | 9999 | |
| 134 | 50 | 1 | Main unit drive serial input error 1 | 9999 | |
| 135 | 50 | 2 | Main unit serial input error 2 | 9999 | |
| 136 | 50 | 3 | Main unit serial input error 3 | 9999 | |
| 137 | 50 | 4 | Main unit serial input error 4 | 9999 | |
| 138 | 50 | 5 | Drive board communication reception error detection | 9999 | |
| 139 | 50 | 10 | Image control board communication connection error | 9999 | |
| 140 | 50 | 11 | Image control board communication | 9999 | |
| 141 | 52 | 1 | Internal cooling fan MT12 EM1 | 9999 | |
| 142 | 52 | 2 | Internal cooling fan MT12 EM2 | 9999 | |
| 143 | 52 | 3 | Internal cooling fan MT1 EM1 | 9999 | |
| 144 | 52 | 4 | Internal cooling fan MT1 EM2 | 9999 | |
| 145 | 52 | 5 | Internal cooling fan MT2 EM1 | 9999 | |
| 146 | 52 | 6 | Internal cooling fan MT2 EM2 | 9999 | |
| 147 | 52 | 7 | Internal cooling fan MT3 EM1 | 9999 | |
| 148 | 52 | 8 | Internal cooling fan MT3 EM2 | 9999 | |
| 149 | 52 | 9 | Internal cooling fan MT3 EM3 | 9999 | |
| 150 | 52 | 10 | Internal cooling fan MT1/2 EM | 9999 | |
| 151 | 52 | 11 | Internal cooling fan MT3 EM | 9999 | |
| 152 | 53 | 1 | Main MT EM | 9999 | |
| 153 | 53 | 2 | TC fuse blowing detection 1 | 9999 | |
| 154 | 53 | 3 | TC fuse blowing detection 2 | 9999 | |
| 155 | 53 | 4 | Key counter fuse blowing detection 1 | 9999 | |
| 156 | 53 | 5 | Key counter fuse blowing detection 2 | 9999 | |
| 157 | 53 | 6 | 12V fuse blowing detection | 9999 | |
| 158 | 53 | 7 | 5V fuse blowing detection | 9999 | |

| NO | Toruble code | | Description | Maximum count | Remarks |
|-----|--------------|----|--|---------------|---------|
| 159 | 53 | 8 | Printer control 12V detection | 9999 | |
| 160 | 53 | 9 | Excessive AC voltage detection | 9999 | |
| 161 | 53 | 10 | 5V fuse blowing detection | 9999 | |
| 162 | 53 | 11 | SD/MC fuse blowing detection 1 | 9999 | |
| 163 | 53 | 12 | SD/MC fuse blowing detection | 9999 | |
| 164 | 56 | 2 | Initial communication failure | 9999 | |
| 165 | 56 | 1* | Operation panel ISW not written | 9999 | |
| 166 | 60 | 1 | Communication (send) error | 9999 | |
| 167 | 60 | 2 | Communication (reception) error | 9999 | |
| 168 | 60 | 11 | DDF ISW not written | 9999 | |
| 169 | 67 | 1 | Registration sensor error | 9999 | |
| 170 | 67 | 2 | Read sensor error | 9999 | |
| 171 | 67 | 3 | LSB sensor error | 9999 | |
| 172 | 67 | 4 | Non-volatile memory error | 9999 | |
| 173 | 67 | 5 | Fan motor driving error | 9999 | |
| 174 | 67 | 6 | CBS sensor error | 9999 | |
| 175 | 67 | 7 | SSB sensor error | 9999 | |
| 176 | 67 | 8 | Paper feed tray up/down driving error | 9999 | |
| 177 | 70 | 1 | FN-104 communication | 9999 | |
| 178 | 70 | 2 | FN-104 communication start acknowledgment error detection error | 9999 | |
| 179 | 77 | 1 | Shift driving error | 9999 | |
| 180 | 77 | 2 | Tray up/down driving error | 9999 | |
| 181 | 77 | 3 | Matching plate drive error | 9999 | |
| 182 | 77 | 4 | Ejection roller drive error | 9999 | |
| 183 | 77 | 5 | Ejection slot driving error | 9999 | |
| 184 | 77 | 6 | Stapler movement unit driving error | 9999 | |
| 185 | 77 | 7 | Stapler rotation unit driving error | 9999 | |
| 186 | 77 | 8 | Stapler rotation unit driving error | 9999 | |
| 187 | 77 | 11 | Stapler F-unit error | 9999 | |
| 188 | 77 | 12 | Stapler R-unit error | 9999 | |
| 189 | 77 | 15 | Edge conveyance motor driving error | 9999 | |
| 190 | 77 | 21 | Stapler rear end stopper motor | 9999 | |
| 191 | 77 | 22 | Stapler side guide motor | 9999 | |
| 192 | 77 | 23 | Stapler stopper release motor | 9999 | |
| 193 | 77 | 24 | Center fold rear end stopper motor | 9999 | |
| 194 | 77 | 25 | Center fold knife motor driving error | 9999 | |
| 195 | 77 | 26 | Middle fold conveyance motor driving error | 9999 | |
| 196 | 77 | 31 | Cutter transfer driving error | 9999 | |
| 197 | 77 | 32 | Cutter driving error | 9999 | |
| 198 | 77 | 33 | Cutter rear end stopper driving error | 9999 | |
| 199 | 77 | 34 | Cutter rear end release motor driving error | 9999 | |
| 200 | 77 | 35 | Cutter press motor driving error | 9999 | |







25 ADJUSTMENT

| NO | Toruble code | | Description | Maximum count | Remarks |
|-----|--------------|----|---|---------------|---------|
| 201 | 77 | 41 | Sheet feeder up motor driving error | 9999 | |
| 202 | 77 | 91 | Sub-CPU reception error | 9999 | |
| 203 | 77 | 92 | Main CPU reception error | 9999 | |
| 204 | 80 | 1* | Printer control ISW not written | 9999 | |
| 205 | 80 | 21 | VIF control ISW not write | 9999 | |
| 206 | 80 | 30 | ISW time-out | 9999 | |
| 207 | 80 | 31 | ISW data error | 9999 | |
| 208 | 80 | 32 | ISW write error | 9999 | |
| 209 | 90 | 1 | ADU drive serial input error 1 | 9999 | |
| 210 | 90 | 2 | ADU drive serial input error 2 | 9999 | |
| 211 | 93 | 1 | 12 V fuse blowing detection | 9999 | |
| 212 | 93 | 2 | -5 V fuse blowing detection | 9999 | |
| 213 | 93 | 3 | ADU conveyance motor fuse blowing detection | 9999 | |
| 214 | 93 | 4 | ADU reversal motor fuse blowing | 9999 | |
| 215 | 93 | 5 | SD/MC fuse blowing detection 1 | 9999 | |
| 216 | 93 | 6 | SD/MC fuse blowing detection 2 | 9999 | |
| 217 | 60 | 3 | ADF initial communication error | 9999 | |
| 218 | 80 | 1 | Printer control initial communication error | 9999 | |
| 219 | 80 | 2 | Printer control communication error | 9999 | |
| 220 | 80 | 3 | Operation panel communication error | 9999 | |
| 221 | 46 | 40 | HDD initialization error | 9999 | |
| 222 | 46 | 29 | Calibration start disabled | 9999 | |
| 223 | 46 | 30 | Calibration end disabled | 9999 | |
| 224 | 46 | 31 | APC initial sampling error | 9999 | |
| 225 | 46 | 32 | MPC error | 9999 | |
| 226 | 46 | 33 | Sub-scan beam correction error | 9999 | |
| 227 | 46 | 34 | Initialization incomplete | 9999 | |
| 228 | 46 | 41 | Failure in job RAM data storage on HDD | 9999 | |
| 229 | 46 | 42 | HDD periodic cleaning error | 9999 | |
| 230 | 46 | 43 | No stamp/overlay image specified | 9999 | |
| 231 | 77 | 36 | Trimmer pusher motor driving error | 9999 | |
| 232 | 77 | 37 | Trimmer holder motor driving error | 9999 | |

Note: When DIPSW3-1 is set to 1, SC34, 35, and 36 are not counted.

[7] Copy Count by Parts to be Replaced (Fixed Parts)

This function allows you to display or reset the copy count for a fixed part or data.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select “  Parts counter.” |
| 3 | [Parts Counter Menu Screen] Select “  Count of special parts.” |
| 4 | [Copy Count by Parts to be Replaced (Fixed) Screen] Data numbers (No.), part names (Name), and count values are displayed in a list format. Using  and  keys, select a part name. To scroll the screen, use  and  keys. |
| 5 | Press the [COUNT RESET] key to reset the count value of the part displayed in reverse video. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the 25 Mode Menu screen. |

Copy count parts counter

| NO | Part name | Part No. | Maximum count | Counting condition |
|----|---------------------|----------|---------------|---|
| 1 | Fixing cleaning web | 40143030 | 99999999 | Count 1 per ejected paper for single sided, 2 for double sided |
| 2 | Developer | 8971-101 | 99999999 | Always unaffected by 25DIPSW |
| 3 | OPC drum | 89711291 | 99999999 | For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 4 | Cleaning blade | 40143021 | 99999999 | 25DIPSW8-6 |
| 5 | Fur brush | 40143032 | 99999999 | =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |

25 ADJUSTMENT

| NO | Part name | Part No. | Maximum count | Counting condition |
|----|------------------------|----------|---------------|---|
| 6 | Charging grid | 40143009 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 7 | Charging unit cleaning | 40143022 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 8 | Suction filter | 40143014 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 9 | Separation claws | 40143013 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 10 | Trans./sep. wire | 40143011 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 11 | Trans./sep. CL unit | 40143023 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 12 | Fix. roller (U) | 40143015 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 13 | Fix. roller unit (L) | 40143031 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 14 | Fixing claws upper | 40143017 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |

| NO | Part name | Part No. | Maximum count | Counting condition |
|----|-----------------------|----------|---------------|---|
| 15 | Fixing claws lower | 40143002 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 16 | Heat insu. sleeve (U) | 40143007 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 17 | Upper roller bearing | 40141747 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 18 | Cleaning rollers | 40143019 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 19 | Temperature sensor | ——— | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 20 | Trans/Sep unit | 40143202 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 21 | Heat insulate sleeve | 40143005 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 22 | Heat roller holder | 40143006 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 23 | Upper roller sensor | 40142300 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |

25 ADJUSTMENT

| NO | Part name | Part No. | Maximum count | Counting condition |
|----|------------------------|----------|---------------|---|
| 24 | Heating roller senso | 40142302 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 25 | Fixing heat rollers | 40143016 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 26 | Ozone filter | 40141795 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 27 | Charging corona | 40143200 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 28 | PCL | 40143201 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 29 | Developing unit | 40143025 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 30 | TSL | 40142292 | 99999999 | 25DIPSW8-6 =0: Count 1 per ejected paper for single sided, 2 for double sided =1: For A3, 11x17, count 2 per ejected paper for single sided, 4 for double sided |
| 31 | Tray 1 feed roller | 40143027 | 99999999 | 1 is counted each time the paper from tray 1 is ejected. |
| 32 | Tray 1 conv/rev roller | 40143026 | 99999999 | 1 is counted each time the paper from tray 1 is ejected. |
| 33 | Tray 1 feed clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 1 is ejected. |
| 34 | Tray 1 convey clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 1 is ejected. |
| 35 | Tray 1 feed count | — | 99999999 | 1 is counted each time the paper from tray 1 is ejected. |
| 36 | Tray 2 feed roller | 40143029 | 99999999 | 1 is counted each time the paper from tray 2 is ejected. |

| NO | Part name | Part No. | Maximum count | Counting condition |
|----|-----------------------------------|----------|---------------|--|
| 37 | Tray 2 conv/rev roller | 40143026 | 99999999 | 1 is counted each time the paper from tray 2 is ejected. |
| 38 | Tray 2 feed clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 2 is ejected. |
| 39 | Tray 2 convey clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 2 is ejected. |
| 40 | Tray 2 feed count | ——— | 99999999 | 1 is counted each time the paper from tray 2 is ejected. |
| 41 | Tray 3 feed roller | 40143029 | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 42 | Tray 3 conv/rev roller | 40143028 | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 43 | Tray 3 feed clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 44 | Tray 3 convey clutch | 40142290 | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 45 | Tray 3 feed count | ——— | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 46 | By-pass feed roller | 40143027 | 99999999 | 1 is counted each time the paper from bypass tray is ejected. |
| 47 | By-pass conveyance/reverse roller | 40143026 | 99999999 | 1 is counted each time the paper from bypass tray is ejected. |
| 48 | By-pass count | ——— | 99999999 | 1 is counted each time the paper from bypass tray is ejected. |
| 49 | Tray 4 feed roller | 40143029 | 99999999 | 1 is counted each time the paper from LCT is ejected. |
| 50 | Tray 4 conv/rev roller | 40143028 | 99999999 | 1 is counted each time the paper from LCT is ejected. |
| 51 | Tray 4 feed clutch | 40142290 | 99999999 | 1 is counted each time the paper from LCT is ejected. |
| 52 | Tray 4 convey clutch | 40142290 | 99999999 | 1 is counted each time the paper from LCT is ejected. |
| 53 | Tray count | ——— | 99999999 | 1 is counted each time the paper from LCT is ejected. |
| 54 | V-convey exit roller | 40142023 | 99999999 | 1 is counted each time the paper from tray 1/2/3 is ejected. |
| 55 | V-convey exit roller/M | 40142024 | 99999999 | 1 is counted each time the paper from tray 2/3 is ejected. |
| 56 | V-convey exit roller/L | 40142024 | 99999999 | 1 is counted each time the paper from tray 3 is ejected. |
| 57 | V-convey clutch | 40142291 | 99999999 | 1 is counted each time the paper from tray 2/3 is ejected. |
| 58 | FNS Up/Down motor | 40141155 | 99999999 | 1 is counted each time the paper from FNS main tray is ejected. 1 is counted each time a copy is ejected in stapling mode. |

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| NO | Part name | Part No. | Maximum count | Counting condition |
|----|-----------------------------------|----------|---------------|---|
| 59 | FNS stapler/front | 40141095 | 99999999 | 1 is counted each time a copy is ejected in stapling front 1-point stapling, stapling 2-point stapling, or middle binding mode. |
| 60 | FNS stapler/rear | 40141095 | 99999999 | 1 is counted each time a copy is ejected in stapling front 1-point stapling, stapling 2-point stapling, or middle binding mode. |
| 61 | FNS shift motor | 40143118 | 99999999 | 1 is counted each time even-numbered paper is ejected. |
| 62 | FNS exit cont. motor | 40143118 | 99999999 | 1 is counted each time large size stapling (A4R/ 8.5 x 11R or larger) job starts. 1 is counted each time paper is ejected from each section. 1 is counted each time stapling and folding or folding job starts. |
| 63 | Saddle stitch stop M | 40141227 | 99999999 | 1 is counted each time paper is ejected in stapling and folding or folding mode. |
| 64 | FNS folding motor | 40141155 | 99999999 | 1 is counted each time paper is ejected in stapling and folding or folding mode. |
| 65 | FNS feed clutch(Cover Inserter A) | 40141696 | 99999999 | 1 is counted each time PI cover sheet is ejected. |
| 66 | ADF pickup roller | 40141446 | 99999999 | Number of originals passes in all modes |
| 67 | ADF feed roller | 40141447 | 99999999 | Number of originals passes in all modes |
| 68 | ADF retard roller | 40141448 | 99999999 | Number of originals passes in all modes |
| 69 | ADF sub pick roller | 40141443 | 99999999 | Number of originals passes in all modes |
| 70 | ADF torque limiter | 40143136 | 99999999 | Number of originals passes in all modes |
| 71 | ADF SDF solenoid | 40141522 | 99999999 | All originals passed in SDF mode |
| 72 | ADF LSB solenoid | 40141521 | 99999999 | 1) 1 is counted each time original is set in large size 1-sided original mode. 2) 1 is counted each time original is set in large size 2-sided original mode. |
| 73 | ADF press/release SD | 40141521 | 99999999 | 1 is counted each time original is set in large size 2-sided original mode. |
| 74 | ADF SSB solenoid | 40141521 | 99999999 | 1 is counted each time all-size 2-43sided original mode. |
| 75 | Toner seal board | 40143240 | 99999999 | 1 is counted each time 1-sided original is ejected; 2 is counted each time 2-sided original is ejected. |
| 76 | Guide plate assy | 40143235 | 99999999 | 1 is counted each time 1-sided original is ejected; 2 is counted each time 2-sided original is ejected. |
| 77 | Registration clutch | 40142290 | 99999999 | 1 is counted each time 1-sided original is ejected; 2 is counted each time 2-sided original is ejected. |
| 78 | ADU pre-regis. CL | 40142290 | 99999999 | 2 is counted each time 2-sided paper is ejected. (0 is counted when 1-sided paper is ejected.) |
| 79 | Regis. feed count | — | 99999999 | 1 is counted each time 1-sided paper is ejected; 2 is counted each time 2-sided paper is ejected. |

| NO | Part name | Part No. | Maximum count | Counting condition |
|-----|--------------------------|----------|---------------|--|
| 80 | Reversal exit count | — | 99999999 | 2 is counted each time 1-sided paper is ejected after being reversed. 0 is counted each time 1-sided paper is ejected straight. 1 is counted each time 2-sided paper is ejected. |
| 81 | Paper feed count ADU | — | 99999999 | 2 is counted each time 2-sided paper is ejected. (0 is counted when 1-sided paper is ejected.) |
| 82 | Exposure ON time | 40141830 | 99999999 | Unit |
| 83 | Main switch | 40141807 | 99999999 | 1 is counted each time the power is turned OFF with the main SW set at OFF. |
| 84 | Door switch | 40141741 | 99999999 | 1 is counted each time front door is opened. |
| 85 | Web motor | 40142289 | 99999999 | 1 is counted each time 1-sided paper is ejected; 2 is counted each time 2-sided paper is ejected. |
| 86 | Paper adjuster (trimmer) | 40142391 | 99999999 | Incremented by 1 each time the cutter operates. |
| 87 | | | 99999999 | |
| 88 | | | 99999999 | |
| 89 | | | 99999999 | |
| 89 | | | 99999999 | |
| 90 | | | 99999999 | |
| 91 | | | 99999999 | |
| 92 | | | 99999999 | |
| 93 | | | 99999999 | |
| 94 | | | 99999999 | |
| 95 | | | 99999999 | |
| 96 | | | 99999999 | |
| 97 | | | 99999999 | |
| 98 | | | 99999999 | |
| 99 | | | 99999999 | |
| 100 | | | 99999999 | |
| 101 | | | 99999999 | |
| 102 | | | 99999999 | |
| 103 | | | 99999999 | |
| 104 | | | 99999999 | |
| 105 | | | 99999999 | |
| 106 | | | 99999999 | |
| 107 | | | 99999999 | |
| 127 | | | 99999999 | |
| 128 | | | 99999999 | |

Notes: Definition of large-size originals in terms of part counting.

The following originals are defined as large size original.

1. Sizes of originals ejected to exit tray (for large size) of DF (A4/B4/A4R/B5R/F4/11x17/8.5x14/8.5x11R)
2. All originals in mixed original mode

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[8] Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to make the following settings for an optional part or data:

1. Copy count resetting
2. Limit value setting
3. Part number setting
4. Part name setting

The above settings can be made for 30 data numbers, No.1 to No.30.

The copy count is incremented by 1 for each side irrespective of the paper size.

1. Resetting the Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to reset the copy count by parts to be replaced (optional parts).

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " 5 Copy Count by Parts to be Replaced." |
| 3 | [Parts Counter Menu Screen] Select " 2 Optional Parts Count." |
| 4 | [Copy Count by Parts to be Replaced (Optional Parts) Screen] Data numbers (No.), part names (Name), part numbers (P/N), and count/limit values are displayed in a list format. Using ▲ and ▼ buttons, select a part name. To scroll the screen, use ⬆ and ⬇ keys. |
| 5 | Press the COUNT RESET button to reset the count value of the part displayed in reverse video. |
| 6 | Press the PREVIOUS SCREEN button to return to the 25 Mode Menu screen. |

Reference:

If the copy count exceeds the limit, the * mark appears to the right of the limit value.

2. Changing the data on the Copy Count by Parts to be Replaced (Optional Parts)

This function allows you to change the limit value, part number, or part name for the desired optional copy count by parts to be replaced (optional parts).

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " 5 Copy Count by Parts to be Replaced." |
| 3 | [Parts Counter Menu Screen] Select " 2 Optional Parts Count." |
| 4 | [Copy Count by Parts to be Replaced (Optional Parts) Screen] Data numbers (No.), part names (Name), part numbers (P/N), and count/limit values are displayed in a list format. Using ▲ and ▼ buttons, select a data number (No.). To scroll the screen, use ⬆ and ⬇ keys |
| 5 | Press the Part Name Set , P/N Set , or Limit Set button. |
| 6 | [Data Change Screen by Parts to be Replaced] Press the Part Name Set , P/N Set , or Limit Set button corresponding to the data you want to change. |
| 7 | Enter new data using alphabetic and numeric keys. |
| 8 | Perform steps 6 and 7 repeatedly to change other data. |
| 9 | Press the OK key to allow the new data to take effect. To cancel the new data, press the CANCEL button. Pressing either button will display the Copy Count by Parts to be Replaced (Optional Parts) screen again. |
| 10 | Press the PREVIOUS SCREEN button to return to the 25 Mode Menu screen. |

Reference 1:

The characters entered in the data field of each data item will be shifted to the left one after another.




Reference 2:

When the number of entered characters exceeds 10, the leftmost character will disappear.

[9] Setting Passwords

This function allows you to set the following passwords:

1. Key operator password (4 digits)
This password is required to enter the key operator mode.
2. EKC master key code (8 digits)
3. Weekly timer password (4 digits)
This is a weekly timer master key code required to enter various weekly timer setting modes.
This function cannot be used when the machine is not equipped with a weekly timer.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select "  Password Setting." |
| 3 | [Password Setting Screen] Select "Key operator password (4 digits)," "EKC master key code (8 digits)," or "Weekly timer password (4 digits)." |
| 4 | Enter a new password using numeric keys. |
| 5 | Perform steps 3 and 4 repeatedly to set other passwords. |
| 6 | Press the  button to allow the new passwords to take effect. To cancel the new passwords, press the  button. Pressing either button will display the 25 Mode Menu screen again. |

Reference 1:

The digits entered in the data field of each data item will be shifted to the left one after another.

Reference 2:

When the number of entered digits exceeds 4 or 8, the leftmost character will disappear.

Reference 3:

Setting the key operator password, weekly timer password, and HDD management password to "0000" allows you to use individual modes. That is, the menu screen of each mode appears directly without displaying the password input screen.

[10] Setting the Telephone Number and/or Fax Number of the Service Center

This function allows you to set the telephone number and/or fax number of the service center displayed when a service call occurs. The telephone number and/or fax number are/is also displayed as the basic help topic "Contact Number of Service Center" on the user screen.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " [7] Telephone Number Setting." |
| 3 | [Service Center TEL/FAX Setting Screen] Select "Service center telephone number (16 digits)" or "Service center fax number (16 digits)." |
| 4 | Enter the telephone or fax number using numeric keys. |
| 5 | To set both telephone and fax numbers, perform steps 3 and 4 repeatedly. |
| 6 | Press the [OK] key to allow the telephone number and/or fax number to take effect. To cancel the telephone number and/or fax number, press the [CANCEL] button. Pressing either button will display the 25 Mode Menu screen again. |

Reference 1:

If the length of a telephone or fax number is shorter than 16 digits, use a hyphen(s) to make the overall length 16 digits.

Reference 2:

The entered digits will be shifted to the left one after another, starting at the right end.

[11] Setting the Serial Number

This function allows you to display, set, or change the serial number of the main unit or option.

| Step | Operation |
|------|---|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " [8] M/C serial number setting." |
| 3 | [Serial Number Setting Mode Screen] Press the [Main body] , [Option tray] , [RADF] , or [Finisher] button. |
| 4 | Enter the serial number using alphabetic and numeric keys. |
| 5 | Perform steps 3 and 4 repeatedly to set other serial numbers. |
| 6 | Press the [OK] key to allow the serial numbers to take effect. To cancel the serial numbers, press the [CANCEL] key. Pressing either button will display the 25 Mode Menu screen again. |

Reference 1:

If the set serial number is invalid, a pop-up window appears to display a warning message. Press the **[OK]** button to close the pop-up window, then enter a valid serial number again.

Reference 2:

The entered characters will be shifted to the left one after another, starting at the right end.

[12] Displaying the ROM Version

This function allows you to display the versions of the installed ROMs.

| Step | Operation |
|------|--|
| 1 | Enter the 25 mode. |
| 2 | [25 Mode Menu Screen] Select " [9] Indication of ROM version." |
| 3 | [Indication of ROM Version Screen] The versions of the ROMs installed in the image control, printer control, finisher, RADF, and VIF board are displayed. |
| 4 | Press the [PREVIOUS SCREEN] key to return to the 25 Mode Menu screen. |

25 ADJUSTMENT

[13] List of Adjustment Items in the 25 Mode

| Adjustment Item Menu | | | Remarks |
|----------------------|------------------------------|-----------------------------------|---|
| ① | Software SW setting. | | See "List of Software DIP Switches." |
| ② | Paper size setting | | |
| ③ | PM count | Resetting PM Count | |
| | | Setting PM Cycle | |
| ④ | Data collection | ① Total count of each paper size | |
| | | ② Copy count of each paper size | |
| | | ③ Print count of each paper size | |
| | | ④ RADF count | |
| | | ⑤ Jam data of time series | |
| | | ⑥ Jam count | |
| | | ⑦ Count of each mode | |
| | | ⑧ SC count | |
| | | ⑨ Paper conveyance time data | |
| | | ⑩ Jam count of each section | |
| | | ⑪ SC count of each section | |
| ⑤ | Parts counter | ① Count of each parts | COUNT RESET |
| | | ② Count of special parts | COUNT RESET |
| | | | Part name setting |
| | | | P/N Setting |
| | | | Limit Setting |
| ⑥ | Password setting | Key Operator password | 4 digits |
| | | EKC master key code | 8 digits |
| | | Weekly timer password | 4 digits |
| | | HDD management password | 4 digits |
| ⑦ | Telephone/FAX number setting | Customer support telephone Number | 16 digits |
| | | Customer support FAX number | 16 digits |
| ⑧ | M/C serial number setting | Main body | |
| | | Optional tray | |
| | | RADF | |
| | | Finisher | |
| ⑨ | Indication of ROM version | | Indication of versions of ROMs installed in the main machine, operation panel, finisher, and RADF |
| ⑩ | ISW | | |
| | Setting data input | | |

36 MODE

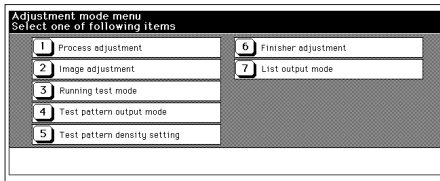
[1] Setting Method

A special adjustment mode called the 36 Mode is provided. This mode is used to perform various adjustments.

1. Turn off the main switch.
2. Turn on the main switch while holding down both paper quantity buttons 3 and 6. The 36 Mode Menu Screen appears.

At this point, you are in 36 mode and normal copy operation is disabled.

[36 Mode Menu Screen]



3. Press the number key corresponding to the item to adjust.
The setting screen for each item is displayed.
4. Enter data in each adjustment screen.
5. If there are several adjustment items, press the **[NEXT ITEM]** or **[PREVIOUS ITEM]** key to select the desired item. If there are more screens, press the key displayed on screen to change screen.
6. Enter data and press the **[SET]** key if it is available, to confirm your entry.
7. Press the **[PREVIOUS SCREEN]** key to end adjustment.
8. Turn off the main switch and exit the 36 mode.
9. The new adjustment values take effect after re-starting the machine.

[2] High Voltage Adjustment

Adjusting the high voltage for charging, transfer, separation, and development.

1. Select **[1]** Process Adjustment in the 36 Mode Menu Screen to display the Process Adjustment Menu Screen.
2. Press **[1]** High Voltage Adjustment in the Process Adjustment Menu Screen to display the High Voltage Adjustment Menu.
3. High Voltage Adjustment consists of the following:
 - [1] High Voltage Auto Adjustment
 - [2] High Voltage Adjustment (Charge)
 - [3] High Voltage Adjustment (Transfer)
 - [4] High Voltage Adjustment (Separation AC)
 - [5] High Voltage Adjustment (Separation DC)
 - [6] High Voltage Adjustment (Charging grid voltage)
 - [7] High Voltage Adjustment (Bias of development)
 - [8] Transfer Guide Confirm
4. Press the number button corresponding to the item to be adjusted.
The adjustment screen of the selected item is displayed.
5. When adjustment completes, the screen returns to the High Voltage Adjustment Menu Screen.
6. Press the **[PREVIOUS SCREEN]** key in the High Voltage Adjustment Menu Screen to return to the Process Adjustment Menu Screen.

36 ADJUSTMENT

1. High Voltage Auto Adjustment

Charging, separation (AC), separation (DC), development bias current and voltage are adjusted in sequence.

Preparation: Be sure the drum frame is set.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [1] Process adjustment. |
| 3 | [Process Adjustment Menu Screen] Press [1] High Voltage Adjustment". |
| 4 | [High Voltage Adjustment Menu Screen] Press [1] High Voltage Auto Adjustment". |
| 5 | [High Voltage Auto Adjustment screen] Press the [START] key. Various high voltage adjustments are made automatically. Adjustment completes in about 30 seconds and a message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process Adjustment Menu Screen. |

Reference 1:

If a transfer adjustment error, separation DC adjustment error, separation AC adjustment error or development bias adjustment error message is displayed during high voltage auto adjustment, clean the unit associated with the error, check its installation state and retry the high voltage auto adjustment.

2. High Voltage Adjustment (Charge)

High Voltage Adjustment (Charge) is inhibited in the field.

3. High Voltage Adjustment (Transfer)

Default setting value must be set under the guidance of Minolta.

Default: 39

4. High Voltage Adjustment (Separation AC)

Default setting value must be set under the guidance of Minolta.

Default: 117

5. High Voltage Adjustment (Separation DC)

Default setting value must be set under the guidance of Minolta.

Default: 90

6. High Voltage Adjustment (Charging Grid Voltage)

High Voltage Adjustment (Charging Grid Voltage) is inhibited in the field.

7. High Voltage Adjustment (Bias of Development)

Default setting value must be set under the guidance of Minolta.

Default: 77

8. Transfer Guide Confirm

Transfer Guide Confirm is inhibited in the field.

[3] Drum Peculiarity Adjustment

Adjusting the blade set, drum potential, maximum density (Dmax), dot diameter, laser offset and gamma.

1. Select **[1]** Process adjustment in the 36 Mode Menu Screen to display the Process Adjustment Menu Screen.
2. Press **[2]** Drum peculiarity adjustment in the Process Adjustment Menu Screen to display the Drum Peculiarity Adjustment Menu Screen.
3. Drum peculiarity adjustment consists of the following:
 - [1] Blade setting mode
 - [2] Auto drum potential adjustment
 - [3] Auto maximum density adjustment (Dmax adjustment)
 - [4] Auto dot diameter adjustment
 - [5] LD1 offset adjustment
 - [6] LD2 offset adjustment
 - [7] Auto gamma adjustment
4. Press the number key corresponding to the item to be adjusted.
The adjustment screen of the selected item is displayed.
5. When adjustment completes, the screen returns to the Drum Characteristic Adjustment Menu Screen.
6. Press the **[PREVIOUS SCREEN]** key in the Drum Characteristic Adjustment Menu Screen to return to the Process Adjustment Menu Screen.

1. Blade setting mode

In this mode, toner stuck on the drum surface during replacement of the cleaning blade or drum is removed to prevent damage to the drum and cleaning blade.

Preparation: Be sure the drum unit is set.

Apply setting powder to all the surface of the drum.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Press " [2] Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode Menu Screen] Press " [1] Blade setting mode." |
| 5 | [Blade setting mode Screen] Press the [START] key. Adjustment completes in about 5 seconds and an end message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

36 ADJUSTMENT

2 Auto drum potential adjustment

Automatically adjusting the development bias and drum applied voltage by measuring the drum potential. This adjustment should be performed when the drum or developer is replaced.

Preparation: Be sure the drum unit is set.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 1 " Process adjustment." |
| 3 | [Process adjustment Screen] Press " 2 " Drum peculiarity Adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " 2 " Auto drum potential adjustment." |
| 5 | [Auto drum potential adjustment Screen] Press the [START] key. Development bias and applied voltage are adjusted automatically. Adjustment completes in about 10 seconds and an end message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

Reference 1:

If any one of the following error messages appears during auto drum potential adjustment, clean the DPSB (drum potential sensor board), check its installation state, and retry the auto drum potential adjustment.

<1> Error 1:

During drum surface sensor 0 V check, a voltage over 100 V has been detected for 5 or more times.

<2> Error 2:

It has been judged that VI is 350 V or higher and no control patch is output.

<3> Error 3:

Drum potential has been corrected 10 or more times, but it does not converge.

3. Auto maximum density adjustment (Dmax adjustment)

Automatically adjusting maximum density (Dmax). This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set, developer is in the developing unit. Auto drum potential adjustment must have been complete.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 1 " Process adjustment." |
| 3 | [Process adjustment Screen] Press " 2 " Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " 3 " Auto maximum density adj." |
| 5 | [Auto maximum density adjustment Screen] Press the [START] key. The maximum density (Dmax) is adjusted automatically. Adjustment completes in about 20 seconds and an end message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

Reference 1:

If any one of the following error messages appears during auto maximum density adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto maximum density adjustment.

<1> Error 1:

The Dmax sensor dirt correction has been corrected 10 or more times, but it does not converge.

<2> Error 2:

Maximum density adjustment is not complete when the developing sleeve rotation speed reaches the specified value.

<3> Error 3:

No signal is output from the Dmax sensr. No control patch is output.

4. Auto dot diameter adjustment

Automatically adjusting the dot diameter.

This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set, developer is in the developing unit. Auto drum potential adjustment and auto maximum density adjustment must have been complete.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Press " [2] Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " [4] Auto dot diameter adjustment." |
| 5 | [Auto Dot Diameter Adjustment Screen] Press the [START] key. The dot diameter is adjusted automatically. Adjustment completes in about 30 seconds and an end message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

Reference 1:

If either of the following error messages appears during auto dot diameter adjustment, clean the TSCB (toner control sensor board), check its installation state, and retry the auto dot diameter adjustment.

<1> Error 1:

The γ sensor dirt correction has been corrected 10 or more times, but it does not converge.

<2> Error 2:

Auto dot diameter adjustment has ended with an abnormal value.

5. LD1 offset adjustment

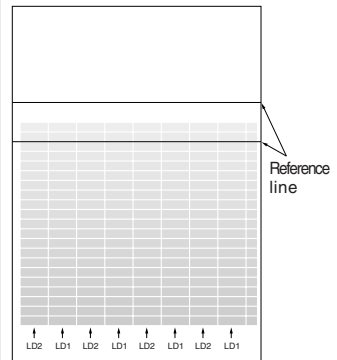
Adjusting the LD1 laser write position.

This adjustment should be performed when the drum or developer is replaced.

Preparation: Be sure the drum unit is set.

Auto drum potential adjustment, auto maximum density adjustment, and auto dot diameter adjustment must have been complete.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Press " [2] Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " [5] LD1 offset adjustment." |
| 5 | [LD1 Offset Adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper and press the Start button to output the test pattern. |
| 7 | Check the test pattern. Specification: The density of test pattern image resulting from two laser output (vertical and horizontal scanning) must be even vertically and horizontally between two image density reference lines, as shown in the following figure. |



36 ADJUSTMENT

| Step | Operation |
|------|--|
| 8 | If the specification is not satisfied, press the C button while pressing the Utility button. |
| 9 | [LD1 offset adjustment Screen] Enter an offset value using the numeric keys and press the [SET] key. Setting range: -128 to +127 |
| 10 | Repeat steps 5 to 9 until the specification is satisfied. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

6. LD2 Offset Adjustment

Adjusting the LD2 laser write position.

This adjustment should be performed when developer is replaced.

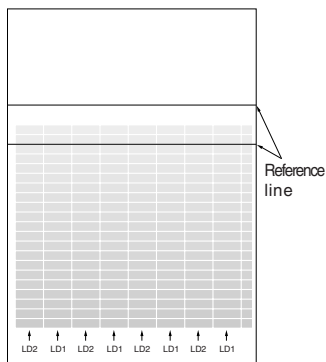
Preparation: Be sure the drum unit is set .

Auto drum potential adjustment, auto maximum density adjustment, auto dot diameter adjustment, and LD1 offset adjustment must have been complete.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Press" [2] Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " [6] LD2 offset adjustment." |
| 5 | [LD2 offset adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper and press the Start button to output the test pattern. |

- 7 Check the test pattern.

Specification: The density of test pattern image resulting from two laser output (vertical and horizontal scanning) must be even vertically and horizontally between two image density reference lines, as shown in the following figure.



- 8 If the specification is not satisfied, press the C button while pressing the Utility button.
- 9 **[LD2 offset adjustment Screen]**
Enter an offset using the numeric keys and press the **[SET]** key.
Setting range: -128 to +127
- 10 Repeat steps 5 to 9 until the specification is satisfied.
- 11 Press the **[PREVIOUS SCREEN]** key to return to the Process adjustment Screen.

7. Auto Gamma Adjustment

Performing gamma adjustment automatically. This adjustment should be performed when the drum, developer, write unit, or dust-proof glass is replaced.

Preparation: Be sure the drum unit is set and auto drum potential adjustment, auto maximum density adjustment, auto dot diameter adjustment, LD1 offset adjustment, and LD2 offset adjustment must have been complete.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Press " [2] Drum peculiarity adjustment." |
| 4 | [Drum peculiarity adjustment mode menu Screen] Press " [7] Auto gamma adjustment." |
| 5 | [Auto gamma adjustment Screen] Press the [START] key. The drum and developer operate to automatically adjust Gamma. Adjustment completes in about 20 seconds and an end message is displayed. |
| 6 | Press the [PREVIOUS SCREEN] key to return to the Process adjustment Screen. |

Reference 1:

If any one of the following error messages appears during auto gamma adjustment, clean the TCSB (toner control sensor board), check its installation state, and retry the auto gamma potential adjustment.

<1> Error 1:

The γ sensor dirt correction has been corrected 10 or more times, but it does not converge.

<2> Error 2:

No signal is output from the γ sensor. No control patch is output.

<3> Error 3:

A recurrence error occurred during γ curve calculation.

[4] Drum Characteristic Adjustment (manual)

1. Maximum density manual adjustment

Maximum density manual adjustment should be performed under the guidance of Minolta.

Adjustment range: 0 to 255

2. Dot diameter correction manual adjustment

Dot diameter correction manual adjustment should be performed under the guidance of Minolta.

Adjustment range: 0 to 255

[5] User Paper Setting

This adjustment is only performed when user uses special copy paper and can not be adjusted using the standard adjustment process.

This setting is applied when "User" is selected for "Paper type/Special size setting" in the key operator mode or when "User paper" is selected for "Transfer/separation corona unit output plain paper" or "Recycled paper" in 25 mode DIPSW. The data for "64 g/m² plain paper" are inputted as the default.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [1] Process adjustment." |
| 3 | [Process adjustment Screen] Select " [4] User paper setting." |
| 4 | Transfer/separation output screen appears. Enter data according to the user specified paper. Data should be input under the guidance of Minolta |

36 ADJUSTMENT

[6] Recall Standard Data (Process Adjustment)

Restoring process adjustment settings to standard values (data after process adjustment).

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [1] Process adjustment. |
| 3 | [Process Adjustment Menu Screen] Select [5] Recall standard data. |
| 4 | [Recall Standard Data Screen] Press the [YES] key. Various data are restored to standard values. |
| 5 | Press the [PREVIOUS SCREEN] key to return to the Process Adjustment Menu Screen. |

[7] Tray Adjustment

This adjustment should be performed when the tray or by-pass unit is replaced.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [2] Image adjustment.” |
| 3 | [Image adjustment mode menu Screen] Select “ [1] Tray adjustment.” |
| 4 | [Tray adjustment Screen] Press the [NEXT ITEM] or [PREVIOUS ITEM] key to select the tray to be adjusted. The screen changes from Tray 1 to Tray 2 to Tray 3 to By-pass 1 to By-pass 2. Using a scale, set the distance between (the inner surfaces of) the paper side guide plates of each tray to 250 mm. Set the distance between (the inner surfaces of) the paper side guide plates of by-pass tray 1 to 210 mm (A4R) and tray 2 to 280 mm (8.5 x 11) respectively. |
| 5 | Press the [START] key. The selected tray is automatically adjusted. After adjustment completes, a message is displayed. |

[8] Magnification Adjustment

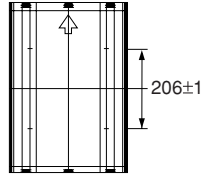
Adjusting the printer and copy vertical and horizontal magnifications.

1. Select **[2]** Image adjustment in the 36 Mode Menu Screen to display the Image adjustment mode menu Screen.
2. Press **[2]** Magnification adjustment in the Image adjustment mode menu Screen to display the Magnification adjustment mode menu Screen.
3. Magnification adjustment consists of the following:
 - ① Printer drum clock adjustment
 - ② Printer horizontal adjustment
 - ③ Scanner drum clock adjustment
 - ④ RADF drum clock adjustment
4. Press the number key corresponding to the item to be adjusted.
The adjustment screen for the selected item is displayed.
5. After adjustment completes, the screen returns to the Magnification Adjustment Menu Screen.
6. Press the **[PREVIOUS SCREEN]** key on the Magnification Adjustment Menu Screen to return to the Image adjustment Menu Screen.

Caution: Check and adjust the printer drum clock adjustment during maintenance. Also adjust the printer restart timing because it changes with the printer drum clock adjustment.

1. Printer vertical magnification adjustment

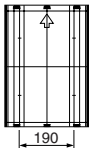
Adjusting the printer vertical magnification.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [2] Magnification adjustment." |
| 4 | [Magnification adjustment mode menu Screen] Press " [1] Printer drum clock adjustment." |
| 5 | [Printer drum clock adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper and press the Start button to output the test pattern (No.16). |
| 7 | Measure the vertical magnification with a ruler. Specification: $\pm 0.5\%$ or less (100% magnification) Within $\pm 1\text{mm}$ with respect to 206 mm  |
| 8 | If the specification is not satisfied, press the C button while pressing the P button. |
| 9 | [Printer drum clock adjustment Screen] Enter a value using the numeric keys and press the [SET] key. Setting range: -27 to +100 1 step=0.05% |
| 10 | Repeat steps 5 to 9 until the specification is satisfied. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Magnification adjustment mode menu Screen. |

36 ADJUSTMENT

2. Printer horizontal magnification adjustment

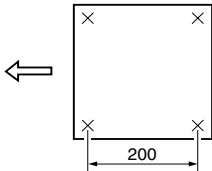
Adjusting the printer horizontal magnification.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [2] Image adjustment.” |
| 3 | [Image adjustment mode menu Screen] Press “ [2] Magnification adjustment.” |
| 4 | [Magnification adjustment mode menu Screen] Press “ [2] Printer horizontal adjustment.” |
| 5 | [Printer Horizontal adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper and press the Start button to output the test pattern (No.16). |
| 7 | Measure the horizontal magnification with a ruler. Specification: $\pm 0.5\%$ or less (100% magnification) Within $\pm 1\text{mm}$ with respect to 190 mm  |
| 8 | If the specification is not satisfied, press the C button while pressing the Utility button. |
| 9 | [Printer Horizontal adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -10 to +10 1 step=0.1% |
| 10 | Repeat steps 5 to 9 until the specification is satisfied. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Magnification adjustment mode menu Screen. |

3. Scanner (platen) vertical adjustment

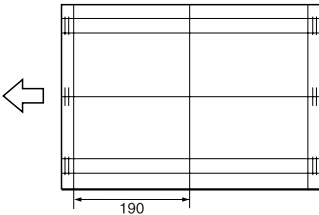
Adjusting vertical magnification during platen copy.

Caution: There is no horizontal magnification adjustment for the scanner.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [2] Image adjustment.” |
| 3 | [Image adjustment mode menu Screen] Press “ [2] Magnification adjustment.” |
| 4 | [Magnification adjustment mode menu Screen] Press “ [3] Scanner drum clock adjustment.” |
| 5 | [Scanner drum clock adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, set a pyramid chart on the original glass, and press the Start button. |
| 7 | Measure the vertical magnification with a ruler. Specification: $\pm 0.5\%$ or less (100% magnification) Within $\pm 1\text{mm}$ with respect to 200 mm  |
| 8 | If the specification is not satisfied, press the C button while pressing the Utility button. |
| 9 | [Scanner drum clock adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -40 to +40 1 step=0.05% |
| 10 | Repeat steps 5 to 9 until the specification is satisfied. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Magnification adjustment mode menu Screen. |

4. Scanner (RADF) vertical magnification adjustment

Adjusting vertical magnification during RADF copy.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press "2" Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press "2" Magnification adjustment." |
| 4 | [Magnification adjustment mode menu Screen] Press "4" RADF drum clock adjustment." |
| 5 | [RADF drum clock Adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the magnification to be adjusted. The screen rotates from 100% to 65% to 200% to 400%. |
| 6 | Press the [400dpi] or [600dpi] key to select the resolution to be adjusted. |
| 7 | Press the [COPY SCREEN] key. |
| 8 | Select A3 (11x17) -size paper, set an adjustment chart on RADF, and press the Start button. |
| 9 | Measure the vertical magnification with a ruler. Specification: $\pm 0.5\%$ or less (100% magnification) Within $\pm 1\text{mm}$ with respect to 190 mm  |
| 10 | If the specification is not satisfied, press the C button while pressing the Utility button. |

| | |
|----|--|
| 11 | [RADF drum clock Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -40 to +40 1 step=0.05% |
| 12 | Repeat steps 5 to 11 until the specification is satisfied. |
| 13 | Press the [PREVIOUS SCREEN] key to return to the Magnification adjustment mode menu Screen. |

36 ADJUSTMENT

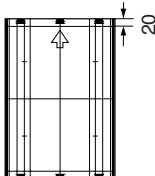
[9] Timing Adjustment

Adjusting the leading edge timing (paper feed restart timing), registration loop amount, and leading edge erase amount.

1. Select **[2]** Image adjustment in the 36 Mode Menu Screen to display the Image adjustment mode menu Screen.
2. Press **[3]** Timing adjustment in the Image adjustment mode menu Screen to display the Timing adjustment mode menu Screen.
3. Timing adjustment consists of the following adjustments:
 - 1 Printer restart timing adj.
 - 2 Printer regist adjustment.
 - 3 Printer pre-regist adjustment.
 - 4 Printer lead edge timing adj.
 - 5 Scanner restart timing adj.
 - 6 RADF restart timing adjustment.
 - 7 RADF regist loop adjustment.
4. Press the number button corresponding to the item to be adjusted.
The adjustment screen of the selected item appears.
5. The Timing adjustment mode menu Screen reappears when adjustment completes.
6. Press the **[PREVIOUS SCREEN]** key in the Timing Adjustment Menu Screen to return to the Image Adjustment Menu Screen.

1. Printer restart timing adjustment

Adjusting the printer restart timing for post cards and other papers.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [3] Timing adjustment." |
| 4 | [Timing adjustment mode menu Screen] Press " [1] Printer restart timing adjustment." |
| 5 | [Printer restart timing adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the item to be adjusted. The screen changes between Others and Post card. |
| 6 | Press the [COPY SCREEN] key. |
| 7 | Select A3 (11x17) -size paper and press the Start button to output the test pattern (No.16). |
| 8 | Check the leading edge detection timing. Specification: 20 mm +1.0 mm 0 mm  |
| 9 | If the specification is not satisfied, press the C button while pressing the Utility button. |
| 10 | [Printer restart timing adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -30 to +60 1 step=0.1 mm |
| 11 | Repeat steps 5 to 10 until the specification is satisfied. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Timing adjustment mode menu Screen. |

2 Printer Resist Loop Adjustment

Adjusting the printer resist loop amount for trays (tray 1, 2, 3), manual feed tray, and ADU.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [2] Image adjustment. |
| 3 | [Image Adjustment Menu Screen] Press [3] Timing adjustment. |
| 4 | [Timing Adjustment Menu Screen] Press [2] Paper resist loop adjustment |
| 5 | [Printer Resist Loop Adjustment Screen] Press the [NEXT ITEM] or [PREVIOUS ITEM] key to select the item to be adjusted. The screen changes from Tray to Manual tray to ADU. |
| 6 | Press the [COPY SCREEN] key. |
| 7 | Press the Start button to make a copy. |
| 8 | Check the paper feed loop amount. |
| 9 | If the printer registration loop amount is not appropriate, press the C button while pressing the Utility button. |
| 10 | [Printer Resist Loop Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. <ul style="list-style-type: none"> Tray (tray 1, 2, 3) Setting range: -5 to +5 1 step= 2 ms Manual feed tray Setting range: -10 to +10 1 step= 2 ms ADU Setting range: -10 to +10 1 step= 2 ms |
| 11 | Repeat steps 5 to 10 until the printer registration loop amount is appropriate. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Timing Adjustment Menu Screen. |

3. Printer Pre-resist Adjustment

Adjusting the pre-resist for tray 1, tray 2, tray 3, tray 4 (LCT), and ADU.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [2] Image adjustment. |
| 3 | [Image Adjustment Menu Screen] Press [3] Timing adjustment. |
| 4 | [Timing Adjustment Menu Screen] Press [3] Printer Pre-resist adjustment |
| 5 | [Printer Pre-resist Adjustment Screen] Press the [NEXT ITEM] or [PREVIOUS ITEM] key to select the item to be adjusted. The screen changes from Tray 1 to Tray 2 to Tray 3 to Tray 4 (LCT) to ADU. |
| 6 | Press the [COPY SCREEN] key. |
| 7 | Press the Start button to make a copy. |
| 8 | Check the printer pre-registration. |
| 9 | If the printer pre-registration is not appropriate, press the C button while pressing the Utility button. |
| 10 | [Printer Pre-resist Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. <ul style="list-style-type: none"> Tray 1, 2, 3, 4 (LCT) Setting range: -5 to +5 1 step= 2 ms ADU Setting range: -10 to +10 1 step= 2 ms |
| 11 | Repeat steps 5 to 10 until the printer pre-registration is appropriate. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Timing Adjustment Menu Screen. |

36 ADJUSTMENT

4. Printer lead edge timing adjustment

Adjusting the printer lead edge timing (Image erasure amount).

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 2 Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " 3 Timing adjustment." |
| 4 | [Timing adjustment mode menu Screen] Press " 4 Printer lead edge timing adj." |
| 5 | [Printer lead edge timing adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, place pyramid chart on original glass, and press the Start button. |
| 7 | Check the printer leading edge blank cut amount. Specification: within 3 mm |
| 8 | If the printer leading edge blank cut amount is not appropriate, press the C button while pressing the Utility button. |
| 9 | [Printer lead edge timing adjustment Screen] Enter a value with the numeric keys and Press the [SET] key. Setting range: -20 to +40 1 step=0.1 mm |
| 10 | Repeat steps 5 to 10 until the printer leading edge blank cut amount is within specification. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Timing adjustment mode menu Screen. |

5. Scanner restart timing adjustment

Adjusting the scanner restart timing during platen copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 2 Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " 3 Timing adjustment." |
| 4 | [Timing adjustment mode menu Screen] Press " 5 Scanner restart timing." |
| 5 | [Scanner restart timing adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, set a pyramid chart on the original glass, and press the Start button. |
| 7 | Check the tip timing. Specification: within 3 mm |
| 8 | If the leading edge timing is not appropriate, press the C button while pressing the Utility button. |
| 9 | [Scanner Restart Timing Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -60 to +20 1 step=0.1 mm |
| 10 | Repeat steps 5 to 10 until the leading edge timing is within specification. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Timing adjustment mode menu Screen. |

6. RADF restart timing adjustment

Adjusting the scanner restart timing during RADF copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [3] Timing adjustment." |
| 4 | [Timing adjustment mode menu Screen] Press " [6] RADF restart timing adjustment." |
| 5 | [RADF restart timing adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, set an adjustment chart on RADF, and press the Start button. |
| 7 | Check the leading edge timing on front and back side. Specification: within 3 mm |
| 8 | If the leading edge timing is not appropriate, press the C button while pressing the Utility button. |
| 9 | [RADF restart timing adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the item to be adjusted. The screen changes from SIDE1 to SIDE2. |
| 10 | Enter a value with the numeric keys and press the [SET] key. Setting range: -60 to +50 1 step=0.1 mm |
| 11 | Repeat steps 5 to 10 until the leading edge timing is within specification. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Timing adjustment mode menu Screen. |

7. RADF resist loop adjustment

Adjusting the resist loop amount during RADF copy.

Caution: Printer restart timing adjustment must be completed before performing this adjustment.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [3] Timing adjustment." |
| 4 | [RADF resist loop adjustment Screen] Press " [7] RADF resist loop adjustment." |
| 5 | Press the [COPY SCREEN] key and then switch to Both side - Single side copy mode. |
| 6 | Select A3 (11x17) -size paper, set adjustment chart on RADF, and press the Start button. |
| 7 | Check the loop amounts on the front and back sides. |
| 8 | If the registration loop amount is not appropriate, press the C button while pressing the Utility button. |
| 9 | [RADF resist loop adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the item to be adjusted. The screen changes from SIDE1 to SIDE2. |
| 10 | Enter a value with the numeric keys and press the [SET] key. Setting range: -10 to +10 1 step=0.5 mm |
| 11 | Repeat steps 5 to 11 until the registration loop amount is within specification. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Timing adjustment mode menu Screen. |

[10] RADF Adjustment

Performing RADF density adjustment, RADF original size adjustment, RADF sensitivity adjustment, and RADF incline offset adjustment.

1. Select **[2]** Image adjustment in the 36 Mode Menu Screen and display the Image Adjustment Menu Screen.
2. Press **[4]** RADF adjustment in the Image Adjustment Menu Screen and display the RADF Adjustment Menu Screen.
3. RADF adjustment consists of the following items:
 [1] RADF density adjustment
 [2] RADF original size adjustment
 [3] RADF sensitivity adjustment
 [4] RADF incline offset adjustment
4. Press the number button corresponding to the item to adjust.
 The adjustment screen of the selected item appears.
5. The RADF Adjustment Menu Screen reappears when adjustment completes.
6. Press the **[PREVIOUS SCREEN]** key in the RADF Adjustment Menu Screen to return to the Image Adjustment Menu Screen.

1. RADF density adjustment

When the original reader slit glass is replaced, the density when reading original with RADF must be adjusted.

Preparation: Wipe the original reader slit glass clean. Check that the white chart must not be dirty or folded.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [2] Image adjustment.” |
| 3 | [Image adjustment mode menu Screen] Press “ [4] RADF adjustment.” |
| 4 | [RADF adjustment mode menu Screen] Press “ [1] RADF density adjustment.” |
| 5 | [RADF Density Adjustment Screen] Set white chart on RADF (Caution 1). |
| 6 | Press the [START] key. RADF density is adjusted automatically. When adjustment completes, a message appears on the screen. |
| 7 | If an error message is displayed, repeat steps 5 and 6 (Caution 2). |
| 8 | Press the [PREVIOUS SCREEN] key to return to the RADF adjustment mode menu Screen. |

Caution 1: Be sure to set the white chart in A4 (8.5x11) orientation.

Caution 2: If the error message appears repeatedly, there is a possibility of scanner-system mechanical, optical, or electrical adjustment error or parts defect.

2. RADF original size adjustment

Perform this adjustment when the RADF original size detection does not operate properly or when replacing the RADF control board.

Caution: RADF original size adjustment consists of A4/8.5 x 11 and B6/5.5 x 8.5R. Use the **(NEXT ITEM)** or **(PREVIOUS ITEM)** key to select the desired adjustment item.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press (2) Image adjustment. |
| 3 | [Image Adjustment Menu Screen] Press (4) RADF adjustment. |
| 4 | [RADF Adjustment Menu Screen] Press (2) RADF original size adjustment. |
| 5 | [RADF Original Size Adjustment Screen] Press the (NEXT ITEM) or (PREVIOUS ITEM) key to select original size to adjust. The screen changes between A4/8.5 x 11 and B6/5.5 x 8.5R. |
| 6 | Set the original of the selected size on RADF and press the (START) key. RADF original size is adjusted automatically. |
| 7 | Repeat steps 5 and 6 and adjust both sizes. |
| 8 | Press the (PREVIOUS SCREEN) key to return to the RADF Adjustment Menu Screen. |

3. RADF sensitivity adjustment

Perform this adjustment when replacing the RADF control board.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press (2) Image adjustment. |
| 3 | [Image Adjustment Menu Screen] Press (4) RADF adjustment. |
| 4 | [RADF Adjustment Menu Screen] Press (3) RADF sensitivity adjustment. |
| 5 | [RADF Sensitivity Adjustment Screen] Press the (START) key. RADF sensitivity is adjusted automatically. |
| 6 | Press the (PREVIOUS SCREEN) key to return to the RADF Adjustment Menu Screen. |

[36] ADJUSTMENT

4. RADF skew offset adjustment

Perform this adjustment when replacing the RADF control board.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [4] RADF adjustment." |
| 4 | [RADF adjustment mode menu Screen] Press " [4] RADF Incline offset adjustment." |
| 5 | [RADF Incline offset adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, set an adjustment chart on RADF, and press the Start button. |
| 7 | Check the RADF incline offset. Specification: 0.5% |
| 8 | If the RADF incline offset is not appropriate, press the C button while pressing the Utility button. |
| 9 | [RADF Incline Offset Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -60 to +60 1 step= 0.05% |
| 10 | If the RADF incline offset is not within specification, repeat steps 5 to 9. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the RADF adjustment mode menu Screen. |

[11] Centering Adjustment

Perform this adjustment to center the image in the paper feed direction.

1. Select [2] Image adjustment in the 36 Mode Menu Screen to display the Image Adjustment Menu Screen.
2. Press [5] Centering adjustment in the Image Adjustment Menu Screen to display the Centering Adjustment Menu Screen.
3. Centering adjustment consists of the following:
 - [1] Printer centering adjustment
 - [2] Scanner centering adjustment
 - [3] RADF centering adjustment
4. Press the button corresponding to the item to adjust.
The adjustment screen of the selected item appears.
5. The Centering Adjustment Menu Screen reappears when adjustment completes.
6. Press the **[PREVIOUS SCREEN]** key in the Centering Adjustment Menu Screen to return to the Image Adjustment Menu Screen.

1. Printer Centering Adjustment

Adjusting the printer centering.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [5] Centering adjustment." |
| 4 | [Centering adjustment mode menu Screen] Press " [1] Printer centering adjustment." |
| 5 | [Printer centering adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper and press the Start button to output the test pattern (No.16). |
| 7 | Fold A3 (11x17) size paper in half in the short edge (landscape) orientation and check whether the lines on the left and right overlap completely. Specification: $\pm 1\text{mm}$ |
| 8 | If the printed image is not appropriate, press the C button while pressing the Utility button. |
| 9 | [Printer Centering Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -64 to +63 1 step=0.1 mm |
| 10 | Repeat steps 5 to 9 until the offset is within specification. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Centering adjustment mode menu Screen. |

2. Scanner centering adjustment

Adjusting the scanner (platen) centering.

Preparation: Printer centering adjustment must be completed before performing this adjustment.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [5] Centering adjustment." |
| 4 | [Centering adjustment mode menu Screen] Press " [2] Scanner centering adjustment." |
| 5 | [Scanner centering adjustment Screen] Press the [COPY SCREEN] key. |
| 6 | Select A3 (11x17) -size paper, set a pyramid chart on the original glass, and press the Start button. |
| 7 | Fold A3 (11x17) size paper in half in the short edge (landscape) orientation and check whether the lines on the left and right overlap completely. Specification: $\pm 2\text{mm}$ |
| 8 | If the offset is not within specification, press the C button while pressing the Utility button. |
| 9 | [Scanner Centering Adjustment Screen] Enter a value with the numeric keys and press the [SET] key. Setting range: -30 to +30 1 step=0.1 mm |
| 10 | Repeat steps 5 to 9 until the offset is within specification. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Centering adjustment mode menu Screen. |

[36] ADJUSTMENT

3. RADF centering adjustment

Adjusting the RADF copy centering.

The adjustment items are as follows:

- Small size front side(B5R)
- Small size back side(B5R)
- Large size front side(A3)
- Large size back side(A3)

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [5] Centering adjustment." |
| 4 | [Centering adjustment mode menu Screen] Press" [3] RADF centering adjustment." |
| 5 | [RADF centering adjustment Screen] Press the [COPY SCREEN] key and enter Both side - Single side copy mode. |
| 6 | Load A3 (11x17) -size paper in tray 1, place small size or large size original on RADF, and press the Start button. |
| 7 | Fold the paper in half at the center and check whether the lines on the left and right overlap completely. Specification: $\pm 1\text{mm}$ |
| 8 | If the offset is not within specification, press the C button while pressing the Utility button. |
| 9 | [RADF Centering Adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the item to adjust. The screen changes as follows: SIDE1(small) -> SIDE2(small) -> SIDE1(large) -> SIDE2(large) |
| 10 | Enter a value with the numeric keys and press the [SET] key. Setting range: -30 to +30 1 step=0.1 mm |
| 11 | Repeat steps 5 to 10 until the offset is within specification. |
| 12 | Press the [PREVIOUS SCREEN] key to return to the Centering adjustment mode menu Screen. |

[12] Distortion adjustment (Copier)

This is to correct distortion during platen/RADF copying. There are four adjustment items for warp correction:

- Scanner (platen) warp (main scan)
- Scanner (platen) warp (sub-scan)
- Scanner (RADF) warp (main scan)
- Scanner (RADF) warp (sub-scan)

| Step | Operation |
|------|---|
| 1 | Enter 36 to select the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " [2] Image adjustment." |
| 3 | [Image adjustment mode menu Screen] Press " [6] Warp adjustment (Copier)." |
| 4 | [Warp adjustment (copier) Screen] Press the [COPY SCREEN] key. |
| 5 | Select A3 (11x17) -size paper. To check the platen, set an adjustment chart on the original glass. To check RADF, set it on RADF. |
| 6 | Check for platen copy warp or RADF copy warp. Allowable warp range: The difference in lengths of two diagonals of a 200 mm square must be within 1.4 mm. |
| 7 | If the platen copy warp or RADF copy warp is outside the allowable warp range, press the Utility button, and the C button with the Utility button held pressed. |
| 8 | [Warp Adjustment (Copier) Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select the desired adjustment item. |
| 9 | Enter a number with ten keys, and press the Set key. Range of setting: -50 to +50 Warp correction unit: 0.06% |
| 10 | Repeat steps 6 through 9 until the warp is within the allowable range. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Warp Adjustment (Copier) screen. |

[13] Recall Standard Data (Image Adjustment)

Restoring image adjustment settings to standard values (data after process adjustment).

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [2] Image adjustment. |
| 3 | [Image Adjustment Menu Screen] Select [7] Recall standard data. |
| 4 | [Recall Standard Data Screen] Press the [YES] key. Various data are restored to standard values. |
| 5 | Press the [PREVIOUS SCREEN] key to return to the Image Adjustment Menu Screen. |

[14] Running Test Mode

Testing continuous copy operation.

Select **[3]** Running Test Mode in the 36 Mode Menu Screen.

This adjustment consists of the following items:

1. Intermittent copy mode
In this mode, the machine goes into the copy ready state after completing a set number of copy operation, waits 0.5 sec, and then repeats the same operation.
2. Paperless intermittent copy mode
In this mode, the machine makes copies at approximately the same timing as for normal copy without performing paper detection or jam detection. In addition, similar to intermittent copy mode, the machine goes into the copy ready state after completing a set number of copy operation, waits 0.5 sec, and then repeats the same operation.
3. Paperless mode
In this mode, the machine makes copies at approximately the same timing as for normal copy without performing paper detection or jam detection.
4. Paperless endless mode
In this mode, the copy quantity is set to infinity. In addition, similar to Paperless mode, the machine makes copies at approximately the same timing as for normal copy without performing paper detection or jam detection.
5. Running mode
This mode consists of Paperless endless mode with repetitive optical scan and auto paper feed tray change.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [3] Running test mode. |
| 3 | [Running Test Mode Menu Screen] Press mode keys [1] to [5] . |
| 4 | [Copy Screen] Press the Start button. |
| 5 | Check the copy operation and then press the Stop/Clear button to stop. |
| 6 | Turn off the main switch and exit Running Test Mode. |

[15] Test pattern output mode

Output test pattern.

Select [4] Test pattern output mode in the 36 Mode Menu Screen to display the Test Pattern Output Mode Screen.

Caution: Do not touch any mode that is not specifically described.

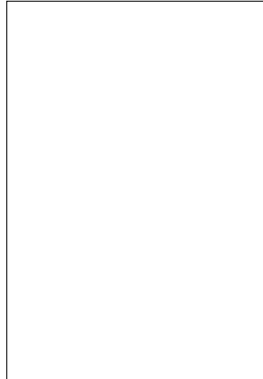
| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [4] Test pattern output mode.” |
| 3 | [Test pattern output mode menu Screen] Use the numeric keys to enter the number of the test pattern to output and press the [SET] key.. |
| 4 | Press the [COPY SCREEN] key. |
| 5 | [Copy Screen] Select A3 (11x17) -size paper and press the Start button to output the test pattern. |
| 6 | To output another test pattern, press the C button while pressing the P button and repeat steps 3 to 5. |
| 7 | Press the [PREVIOUS SCREEN] key to end. |

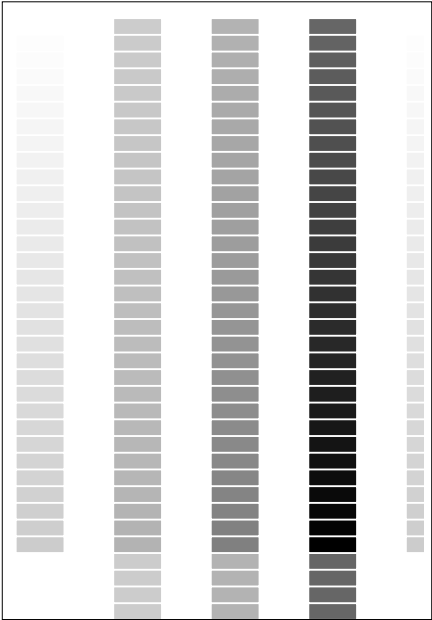
| | |
|--------------|-------------------------|
| No. 1 | Overall halftone |
|--------------|-------------------------|

[Check item]

- When density is set to 70 (halftone)
If there are white stripes, black stripes, or uneven density, determine whether the fault is with the scanner or the printer.
- When density is set to 0 (white)
If the test pattern is blurred, determine whether the fault is with the scanner or the printer.
- When density is set to 255 (black)
If the density is light, determine whether the fault is with the scanner or the printer.

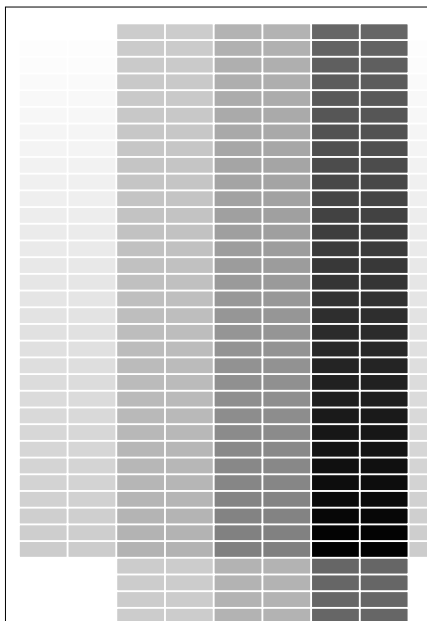
* The above density settings are typical values. See [16] Test Pattern Density Setting for more information on density setting.

Test patterns**DENSITY SET TO 70****DENSITY SET TO 0****DENSITY SET TO 255**

| No. 2 | Gray scale pattern |
|-------|--|
| | <p>[Check Item]</p> <p>If the test pattern is blurred or the density is light, determine whether the fault is with the processing system or with γ correction. If the copy image is abnormal despite this test pattern being normal, either the image processing system or the scanner system is abnormal.</p> |
| | <p>Test patterns</p> <div>  </div> |

No. 3**Gray scale pattern****[Check item]**

If the test pattern is abnormal, check whether the two lasers are emitting light normally.

Test patterns

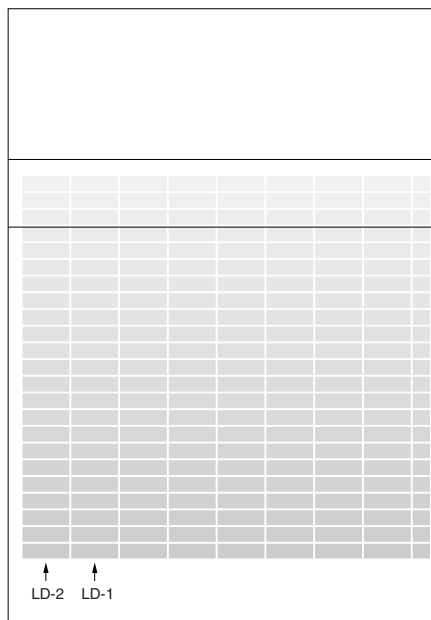
No. 5

Gray scale pattern

[Check Item]

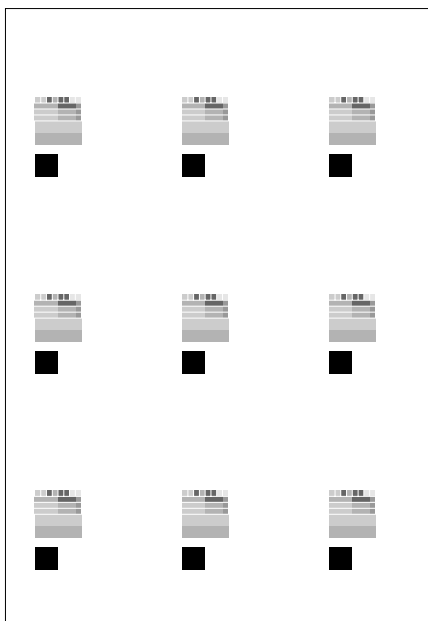
If the test pattern is abnormal, check whether the two laser outputs are uniform.

Test patterns



No. 11 Beam misalignment check**[Check Item]**

If the test pattern is abnormal, check to see if position correction of the two laser beams is normal.

Test patterns

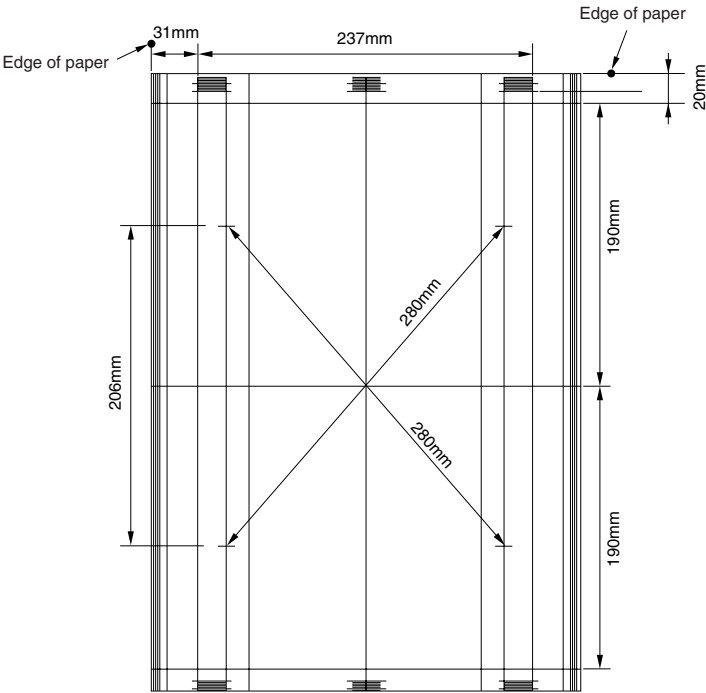
No. 16

Linearity evaluation pattern

[Check Item]

Use this test pattern to determine whether the fault is with the scanner or the printer. The printer horizontal magnification, vertical magnification, tilt, and leading edge timing can be checked. If the copy image is defective despite no abnormality in the test pattern, the scanner is at fault.

Test patterns



[16] Test Pattern Density Setting

Setting the test pattern density.

Select **[5]** Test pattern density setting in the 36 Mode Menu Screen to display the Test Pattern Density Setting Screen.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press [5] Test pattern density setting. |
| 3 | [Test Pattern Density Setting Screen] Use the numeric keys to enter a number and press the [SET] key. Setting range: 0 to 255 |
| 4 | Press the [COPY SCREEN] key. |
| 5 | [Copy Screen] Press the Start button to output a test pattern. |
| 6 | To output another test pattern, press the C button while pressing the Utility button and repeat steps 3 to 5. |
| 7 | Press the [PREVIOUS SCREEN] key to end. |

[17] Finisher adjustment

Adjusting the finisher, cover sheet tray, and trimmer.

1. Select **[6]** Finisher adjustment on the 36 Mode Menu Screen to display the Finisher adjustment mode menu Screen.
2. Finisher adjustment items are as follows:
 - ① Stapling & Folding stopper adj.
 - ② Folding stopper adjustment
 - ③ Cover sheet tray size adj.
 - ④ Trimming stopper adjustment
3. Press the number key corresponding to the adjusted.
The adjustment screen for the selected adjustment item appears.
4. When the adjustment is complete, the Finisher adjustment mode menu Screen appears again.
5. Press the **[PREVIOUS SCREEN]** key to return to the 36 Mode Menu Screen.

36 ADJUSTMENT

1. Stapling and Folding stopper adjustment (FN-4 only)

Adjusting the stapling position when stapling and folding mode.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [6] Finisher adjustment.” |
| 3 | [Finisher adjustment mode menu Screen] Press “ [1] Stapling & Folding stopper adjustment.” |
| 4 | [Staple and Folding stopper adjustment Screen] Press the [COPY SCREEN] key. |
| 5 | Set paper in the tray, set originals on RADF, and press the Start button. |
| 6 | Check the paper center and stapling position. Specification: ± 1 mm |
| 7 | If the stapling position is not within specs, press the C button while pressing the Utility button. |
| 8 | [Staple and Folding stopper adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select a desired paper size. |
| 9 | Enter a value with numeric keys and press the [SET] key. Setting range: -128 to +127 1 step = 0.1 mm |
| 10 | Repeat steps 4-9 until the stapling position is within specs. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Finisher adjustment mode menu Screen. |

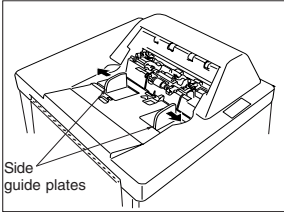
2. Folding stopper adjustment (FN-4 only)

Adjusting the folding position when stapling and folding or folding mode.

| Step | Operation |
|------|--|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press “ [6] Finisher adjustment.” |
| 3 | [Finisher adjustment mode menu Screen] Press “ [2] Folding stopper adjustment.” |
| 4 | [Folding stopper adjustment Screen] Press the [COPY SCREEN] key. |
| 5 | Set paper in the tray, set originals on RADF, and press the Start button. |
| 6 | Check the paper center and folding position. Specification: ± 1 mm |
| 7 | If the folding position is not within specs, press the C button while pressing the Utility button. |
| 8 | [Folding Stopper Adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select a desired paper size. |
| 9 | Enter a value with numeric keys and press the [SET] key. Setting range: -128 to +127 1 step=0.1 mm |
| 10 | Repeat steps 4-9 until the folding position is within specs. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Finisher adjustment mode menu Screen. |

3. Cover sheet tray size adjustment (Cover Inserter A only)

This adjustment should be performed when the cover sheet tray size cannot be detected properly.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 6 Finisher adjustment." |
| 3 | [Finisher adjustment mode menu Screen] Press " 3 Cover sheet tray size adj." |
| 4 | Move the side guide plates of the cover sheet tray to the outmost positions respectively and press the [Start] key on the LCD. An end message appears on the screen. |
| |  <p>Side guide plates</p> |
| 5 | Press the [PREVIOUS SCREEN] key to return to the Finisher adjustment mode menu Screen. |

4. Trimming stopper adjustment (TMG-1 only)

Adjusting the trimming amount.

| Step | Operation |
|------|---|
| 1 | Enter the 36 mode. |
| 2 | [36 Mode Menu Screen] Press " 6 Finisher adjustment." |
| 3 | [Finisher adjustment mode menu Screen] Press " 4 Trimmer stopper adjustment." |
| 4 | [Trimming stopper adjustment Screen] Press the [COPY SCREEN] key. |
| 5 | Set paper in the tray, set originals on RADF, and press the Start button. |
| 6 | Check the trimming amount. Specification: 2-4 mm Note: Setting a trimming amount of 2 mm or less may cause a trimming error. |
| 7 | If the trimming amount is not within specs, press the C button while pressing the Utility button. |
| 8 | [Trimming stopper adjustment Screen] Press the [NEXT ADJUSTMENT] or [PREVIOUS ADJUSTMENT] key to select a desired paper size. |
| 9 | Enter a value with numeric keys and press the [SET] key. Setting range: -99 to +99 1 step=0.1 mm |
| 10 | Repeat steps 4-9 until the trimming amount is within specs. |
| 11 | Press the [PREVIOUS SCREEN] key to return to the Finisher adjustment mode menu Screen. |

[18] List Output Mode

Outputting various data.

1. Select “**7** List output mode” in the 36 Mode Menu Screen to display the List output mode menu Screen.
2. List output mode menu consists of the following:
 - 1** Machine management list 1
 - 2** Adjustment data list
 - 3** Machine management list 2
 - 4** Parameter list
 - 5** Memory dump list
 - 6** Font pattern
3. Press the number button corresponding to the item to adjust.
The output setting screen for the selected item appears.
4. The List Output Mode Menu Screen reappears after each list is output.
5. Press the **PREVIOUS SCREEN** key in the List output mode menu Screen to return to 36 Mode Menu Screen.

Note: List output screen is not displayed for **3** Machine management list 2 and subsequent items unless address 30-1 is set to 1 with **1** software SW setting in 25 mode.

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47 MODE

[1] 47 Mode/Multi Mode Setting Method

1. 47 mode

This mode provides self-diagnostic functions (input/output check function) to check and adjust various signals and loads.

2. 47 mode operation

(1) Starting 47 mode

- Turn off the main switch.
- Turn the main switch back on while holding down 4 and 7 of the copy quantity button.
- Check that the 47 mode is started when message "I/O check mode" appears in the first row of the message area.

(2) Input/output check

- Refer to the I/O check code list and use the copy quantity button to enter the code for the desired signal (such as sensor).
- The entered code appears enclosed in <> in the second row of the message area.
- The numbers are shifted left as they are displayed.
- Check the status of the signal displayed as H or L after "IN:" in the second row of the message display area.

Caution: H and L indicate the level of the signal input to PRCB (printer control board). Note the relationship between the status of the input signal source and the message display.

(3) Output check

- Refer to the I/O check code list and use the copy quantity button to enter the code for the desired output load.
- Press the Start button.
Depending on the output, a load will be activated or a signal will be output.

| Start button | Code | Description |
|----------------------------|--------|------------------------------|
| Before pressing indication | Input | Input signal level |
| After pressing | Output | Output load operation/signal |

(4) Ending 47 mode

- Press the stop button to cancel the operation.
- Turn off the main switch to exit the 47 mode.

| Step | Operation |
|------|--|
| 1 | Turn on the main switch while holding down 4 and 7 of the copy quantity button. |
| 2 | [47 Mode (I/O Check Mode) Screen] Use the copy quantity button to enter the code. |
| 3 | Check the input signal check result displayed after "IN:" in the second row of the message area. |
| 4 | To perform the output check, press the Start button to check the output load. |
| 5 | Press the Stop button to end output check. |
| 6 | To perform other checks, enter a new code using the copy quantity button. |
| 7 | Turn off the main switch to exit the 47 mode. |

Note 1: No data appears on the second row of the message area when 47 mode is entered. Message appears when a number is entered.

Note 2: Simply enter a new code to switch to another code.

Note 3: A newly entered number is written over the previously entered number.

3. Multi mode

This mode is entered from the 47 mode. It enables multiple I/O checks using a single I/O check code.

4. Multi mode operation method

Enter the 47 mode and proceed as follows:

- (1) To check the input
 - a. Using the copy quantity button, enter the check code for the desired I/O.
 - b. The 47 mode code appears enclosed in <> in the second row of the message area.
 - c. Press the Utility button.
 - d. "-" (hyphen) will be displayed following the 47 mode code enclosed in <>. (only codes that support the multi mode can be used)
 - e. Enter the desired multi number using the copy quantity button. (Refer to the multi mode list.)
 - f. The multi number will be displayed enclosed in <>, following the 47 mode code and "-".

| |
|--|
| I/O Check Mode <10-01> IN:-- OUT:-- |
|--|

- g. Press the Utility button.
 - h. Check the status of the code displayed as H or L after "IN:" in the second row of the message display area.
- (2) To check the output
 - a. Press the Start button.
 - b. Press the Stop/Clear button after checking the output.
 - (3) Ending multi mode
 - a. Turn off the main switch to exit the 47 mode (multi mode).

| Step | Operation |
|------|--|
| 1 | Enter the 47 mode. |
| 2 | [47 Mode (I/O Check Mode) Screen] Use the copy quantity button and enter the code. |
| 3 | Press the Utility button. |
| 4 | Enter the multi number using the copy quantity button. |
| 5 | Press the Utility button. |
| 6 | Check the input signal check result displayed after "IN:" in the second row of the message area. |
| 7 | To perform the output check, press the Start button to check the output load. |
| 8 | Press the Stop/Clear button to end the output check. |
| 9 | Turn off the main switch to exit the 47 mode. |

Note 1: To check another multi number in the same code, press the Utility button after completing step 8. Only data enclosed in <> will be cleared. Then enter another multi number.



Note 2: To return to the normal 47 mode, press the Stop/Clear button while holding down the Utility button after completing step 8. (The screen will return to the 47 mode initial state.)

47 ADJUSTMENT

[2] Adjustment Data Display

Displaying a list of machine adjustment values (factory-set values and current values).

No adjustment (data value change) can be made in this mode.

| Step | Operation |
|------|--|
| 1 | Enter the 47 mode. |
| 2 | [I/O Check Mode Screen] Enter 94 with numeric keys. Make sure 94 is displayed in the message display field. |
| 3 | Press the Start button. |
| 4 | [Adjustment Data Display Screen] Press the  or  button to display a desired adjustment item. |
| 5 | To return to the I/O Check Screen, press the [EXIT] key to return to the I/O Check Mode Screen. |

[3] Hard Disk Check

This adjustment shall be performed when checking the total capacity and remaining capacity of the optional hard disk and to check and recover errors related to the hard disk.

| Step | Operation |
|------|---|
| 1 | Enter the 47 mode. |
| 2 | Enter 99 with numeric keys. |
| 3 | (1) Checking the total capacity of the hard disk Press the Utility button and enter 1 with a numeric key. Make sure 99-01 is displayed in the message display field. (2) Checking the remaining capacity of the hard disk Press the Utility button and enter 2 with a numeric key. Make sure 99-02 is displayed in the message display field. (3) Checking and recovering bad sectors on the hard disk Press the Utility button and enter 3 with a numeric key. Make sure 99-03 is displayed in the message display field. |
| 4 | Press the Start button. |

| | |
|---|--|
| 5 | (1) When the total capacity of the hard disk is checked The total capacity of the hard disk is displayed after "OUT:" in the message display field. |
| | (2) When the remaining capacity of the hard disk is checked The remaining capacity of the hard disk is displayed after "OUT:" in the message display field. |
| | (3) When bad sectors on the hard disk are checked and recovered "NOW" is displayed after "OUT:" in the message display field and bad sector check and recovery start. Several minutes later, "OK" is displayed in the case of normal termination; "NG" is displayed in the case of abnormal termination. When "NG" is displayed, retry bad sector check and recovery. If "NG" is displayed again, replace the hard disk. |

Note 1: Once the bad sector check and recovery procedure start, it can not be canceled. (The Stop button and mode change key are ineffective.)

Note 2: The hard disk is weak against vibration and shock. When moving the copy machine, be sure to remove the hard disk in advance.

[4] Input checklist

| Classification | Code | Symbol | Multi mode | Name | Display and Signal Source | | |
|----------------|------|-------------------------------------|------------|--|---|-----|--|
| | | | | | H | L | |
| Analog signal | 001 | TLD | | Remaining toner detection signal | Empty | In | |
| | 002 | TH5 | | Drum (internal) temperature detection signal | | | |
| | 003 | TH1 | | Fixing upper roller temperature detection signal | | | |
| | 004 | TH3 | | Heat roller temperature detection signal | | | |
| | 005 | | | Humidity sensor signal | | | |
| | 006 | | | Dmax MONI signal | | | |
| | 007 | | | Dmax signal | | | |
| | 008 | | | γ signal | | | |
| | 009 | | | Drum potential signal | | | |
| | 010 | | | Drum jam signal | | | |
| Paper feed | 011 | PS26 | 1 | Tray 1 no paper detection signal | ON | OFF | |
| | | PS27 | 2 | Tray 2 no paper detection signal | | | |
| | | PS28 | 3 | Tray 3 no paper detection signal | | | |
| | | PS29 | 4 | Bypass feed tray no paper detection signal | | | |
| | | PS108 | 5 | LCT no paper detection signal | | | |
| | 012 | PS34 | 1 | Tray 1 remaining paper detection signal | ON | OFF | |
| | | PS37 | 2 | Tray 2 remaining paper detection signal | | | |
| | | PS40 | 3 | Tray 3 remaining paper detection signal | | | |
| | | PS102 | 4 | LCT remaining paper detection signal 1 | | | |
| | | PS103 | 5 | LCT remaining paper detection signal 2 | | | |
| | | PS104 | 6 | LCT remaining paper detection signal 3 | | | |
| | 013 | PS105 | 7 | LCT remaining paper detection signal 4 | ON | OFF | |
| | | PS32 | 1 | Tray 1 paper size detection signal 1 | | | |
| | | PS33 | 2 | Tray 1 paper size detection signal 2 | | | |
| | | PS35 | 3 | Tray 2 paper size detection signal 1 | | | |
| | | PS36 | 4 | Tray 2 paper size detection signal 2 | | | |
| | | PS38 | 5 | Tray 3 paper size detection signal 1 | | | |
| | | PS39 | 6 | Tray 3 paper size detection signal 2 | | | |
| | | PS55 | 7 | By-pass feed tray paper size detection signal 1 | | | |
| | 014 | PS56 | 8 | By-pass feed tray paper size detection signal | 0~255 | | |
| | | VR1 | 1 | Tray 1 paper size detection VR signal | | | |
| | | VR2 | 2 | Tray 2 paper size detection VR signal | | | |
| | | VR3 | 3 | Tray 3 paper size detection VR signal | | | |
| | 015 | | VR4 | 4 | By-pass paper feed tray paper size detection VR signal | | |
| | | | 1 | Tray 1 paper size signal | 0:11x17, 1:A3,2:B4, 3:8.5x14, 4:A4R, 5:8.5x11R, 6:B5R, 7:8.5x11, 8:5.5x8.5R, 9:A4, 10:A5R, 11:B5, 12:A5, 13:B6R, 14:5.5x8.5. 14:5.5x8.5, 15:B6, 16:Special, 17:F4(8.125x13.25), 18:F4(8x13), 19:F4(8.25x13), 20:F4(8.5x13), 21:Postcard | | |
| | | | 2 | Tray 2 paper size signal | | | |
| | | | 3 | Tray 3 paper size signal | | | |
| | 4 | By-pass feed tray paper size signal | | | | | |

47 ADJUSTMENT

| Classification | Code | Symbol | Multi mode | Name | Display and Signal Source | |
|-----------------------|------|---------|------------|---|---------------------------|-------|
| | | | | | H | L |
| Paper feed | 016 | PS20 | 1 | Tray 1 upper limit detection signal | Yes | No |
| | | PS21 | 2 | Tray 2 upper limit detection signal | ON | OFF |
| | | PS22 | 3 | Tray 3 upper limit detection signal | | |
| | | PS23 | 4 | By-pass feed tray upper limit detection signal | | |
| | | PS43 | 5 | By-pass feed tray lower limit detection signal | | |
| | | PS109 | 6 | LCT upper limit detection signal | | |
| | | PS101 | 7 | LCT lower limit detection signal | | |
| | 017 | | 1 | Tray 1 tray set detection signal | ON | OFF |
| | | | 2 | Tray 2 tray set detection signal | | |
| | | | 3 | Tray 3 tray set detection signal | | |
| | 018 | PS14 | 1 | Tray 1 handle release detection signal | ON | OFF |
| | | PS15 | 2 | Tray 2 handle release detection signal | | |
| | | PS16 | 3 | Tray 3 handle release detection signal | | |
| Paper feed/conveyance | 020 | PS48 | 1 | Tray 1 paper pre-registration detection signal | ON | OFF |
| | | PS50 | 2 | Tray 2 paper pre-registration detection signal | | |
| | | PS52 | 3 | Tray 3 paper pre-registration detection signal | | |
| | | PS107 | 4 | LCT paper pre-registration detection signal | | |
| | 021 | PS18 | 1 | Tray 1 paper conveyance detection signal | ON | OFF |
| | | PS53 | 2 | Tray 2 paper conveyance detection signal | | |
| | | PS19 | 3 | Tray 3 paper conveyance detection signal | | |
| | 022 | PS47 | 1 | Tray 1 paper feed detection signal | ON | OFF |
| | | PS49 | 2 | Tray 2 paper feed detection signal | | |
| | | PS51 | 3 | Tray 3 paper feed detection signal | | |
| | | PS106 | 4 | LCT paper feed detection signal | | |
| | 023 | PS45 | 1 | Copy paper leading edge detection signal | ON | OFF |
| | | PS54 | 2 | Paper loop detection signal | | |
| | | PS44 | 3 | Second paper feed detection signal | | |
| | 024 | PS2 | 1 | Fixing unit paper ejection detection signal | ON | OFF |
| | | PS61 | 2 | Paper eject detection signal | | |
| | | PS57 | 3 | Paper reversal detection signal | | |
| | | PS8 | 4 | Paper reverse and conveyance detection signal | | |
| | | PS3 | 5 | Fixing unit jam detection signal | | |
| | 025 | PS17 | 1 | Vertical conveyance jam access door open/close detection signal 2 | Open | Close |
| | | PS24 | 2 | Front door open/close detection signal 1 (right front door) | | |
| | | PS25 | 3 | Front door open/close detection signal 2 (left front door) | | |
| | | MS1,MS2 | 4 | Front door open/close detection SW signal | | |
| | | PS100 | 5 | LCT top cover open/close detection signal | | |
| | | PS110 | 6 | LCT jam access cover open/close detection signal | | |
| | | | 7 | Fixing unit set detection signal | ON | OFF |
| | | | 8 | Drum unit set detection signal | | |
| Optics unit | 030 | PS5 | 1 | Scanner home position detection signal | ON | OFF |
| | | PS6 | 2 | Exposure home position detection signal | | |
| | | PS7 | 3 | ADF braking detection signal 1 (paper ejection side) | | |
| | | PS4 | 4 | Scanner reversal detection signal 2 (paper feed side) | | |

| Classification | Code | Symbol | Multi mode | Name | Display and Signal Source | |
|------------------------------|------|--------|------------|---|---------------------------|------------|
| | | | | | H | L |
| Optics unit | 031 | PS62 | 1 | APS sensor 1 detection signal | ON | OFF |
| | | PS63 | 2 | APS sensor 2 detection signal | | |
| | | PS64 | 3 | APS sensor 3 detection signal | | |
| | | PS65 | 4 | APS sensor 4 detection signal | | |
| | | PS66 | 5 | APS sensor 5 detection signal | | |
| | | PS67 | 6 | APS sensor 6 detection signal | | |
| | | PS68 | 7 | APS sensor 7 detection signal | | |
| | | PS315 | 8 | APS timing detection signal | | |
| Optics unit unique functions | 051 | SW100 | | LCT tray down SW detection signal | ON | OFF |
| | 052 | C(K) | | Key counter detection signal | Yes | No |
| | 053 | | | Power supply identification signal | 200V | 100V |
| | 054 | PS41 | 1 | Charging cleaning pad phome position detection signal | ON | OFF |
| | | PS42 | 2 | Charging cleaning pad drive limit detection signal | | |
| | | PS11 | 3 | Transfer/separation cleaning pad home position detection signal | | |
| | | PS12 | 4 | Transfer/separation cleaning pad drive limit detection signal | | |
| RADF | 060 | PS302 | 1 | Original size detection signal 1 | Detect | Not detect |
| | | PS303 | 2 | Original size detection signal 2 | | |
| | | PS306 | 3 | Original registration detection signal | ON | OFF |
| | | PS308 | 4 | Original conveyance detection signal | | |
| | | PS309 | 5 | Original reversal detection signal | | |
| | | PS307 | 6 | Original ejection detection signal 1 | | |
| | | PS313 | 7 | Original ejection to reverse detection signal | | |
| | | PS314 | 8 | Original ejection detection signal 2 | | |
| | | PS310 | 9 | Last original detection signal | | |
| | | PS301 | 10 | DF open/close detection signal | Detect | Not detect |
| | | MS301 | 11 | Cover open/close MS detection signal | | |
| | | — | 12 | Pressure plate open detection signal | | |
| | | PS304 | 13 | Jam in original reversal section detection signal | | |
| | | — | 14 | Separation error detection signal | | |
| | | PS305 | 15 | No original detection signal | | |
| FN-104/FN-4 | 076 | PS1 | 0 | Sub-tray paper exit | OFF | ON |
| | | PS2 | 1 | Tray upper limit | | |
| | | PS3 | 2 | Tray lower limit | | |
| | | PS4 | 3 | FIN entrance passage | | |
| | | PS5 | 4 | Stacker conveyance passage | | |
| | | PS6 | 5 | Paper exit 1 | | |
| | | PS7 | 6 | Staple paper exit upper limit | | |
| | | PS8 | 7 | Alignment plate/upper HP | | |
| | | PS9 | 8 | Paper exit belt HP | | |
| | | PS10 | 9 | Paper exit 2 | | |
| | | PS11 | 10 | Stapler movement HP | | |
| | | PS12 | 11 | Paper exit opening | | |
| | | PS13 | 12 | Entrance paper detection | | |
| | | PS14 | 13 | Stapler rotation HP | | |
| | | PS15 | 14 | Tray no paper detection | | |
| | | PS18 | 15 | Roller shift HP | | |

47 ADJUSTMENT

| Classification | Code | Symbol | Multi mode | Name | Display and Signal Source | |
|-----------------|------|--------|---------------------------------|---|---------------------------|--------------------------|
| | | | | | H | L |
| FN-104/FN-4 | 076 | PS20 | 16 | Stacker no paper detection | OFF | ON |
| | | PS21 | 17 | Stapling and folding stopper release motor HP | | |
| | | PS22 | 18 | Folding knife HP | | |
| | | PS23 | 19 | Stapling and folding stopper HP | | |
| | | PS24 | 20 | Alignment plate/lower HP | | |
| | | PS25 | 21 | Folding paper exit | | |
| | | PS26 | 22 | Folding passage/2 | | |
| | | PS27 | 23 | Folding stopper HP | | |
| PS28 | | | 24:Folding passage/1 | | | |
| TMG-1 | | PS101 | | 25:Entrance | ON | OFF |
| | | PS102 | | 26:Conveyance | with paper | no paper |
| | | PS103 | | 27:Stopper HP | ON | OFF |
| | | PS104 | | 28:Stopper release HP | | |
| | | PS105 | | 29:Press HP | OFF | ON |
| | | PS106 | | 30:Trimmer HP | ON | OFF |
| FN-104/ FN-4 | | — | | 31:— | — | — |
| | | M1 | | 32:Motor lock signal | Lock | Operating |
| | | M7 | 33 | Motor lock signal | | |
| M20 | | 34 | Motor lock signal | | | |
| TMG-1 | | M101 | | 35:Conveyance motor lock signal | | |
| | | — | | 36:— | — | — |
| FN-104/FN-4 | | — | 37 | Folding unit | No unit | With unit |
| TMG-1 | | PS112 | | 38:Pusher | ON | OFF |
| | | — | 39 | Cover Inserter A | No Cover Inserter A | With Cover Inserter A |
| FN-104/FN-4 | | — | 40 | Stapler (R) abnormality EC02 | Normal | Abnormal |
| | | — | 41 | Stapler (R) abnormality EC01 | | |
| | | — | 42 | Stapler (R) abnormality EC00 | | |
| | | — | 43 | Stapler (R) Ready signal | Busy | Ready |
| | — | 44 | Stapler (R) Busy signal | Ready | Busy | |
| | — | 45 | Stapler (R) Clear-request signa | Normal | Demand | |
| | — | 46 | Cover Inserter A start key | OFF | ON | |
| | — | 47 | Cover Inserter A mode key | | | |
| | — | 48 | Stapler (F) abnormality EC02 | Normal | Abnormal | |
| | — | 49 | Stapler (F) abnormality EC01 | | | |
| | — | 50 | Stapler (F) abnormality EC00 | | | |
| | — | 51 | Stapler (F) Ready signal | Busy | Ready | |
| | — | 52 | Stapler (F) Busy signal | Ready | Busy | |
| | — | 53 | Stapler (F) Clear-demand signal | Normal | Demand | |

| Classification | Code | Symbol | Multi mode | Name | Display and Signal Source | |
|------------------|------|--------|------------|---|---------------------------|------------------|
| | | | | | H | L |
| Cover Inserter A | | PS208 | 54 | Sheet set | OFF no paper | ON with paper |
| | | PS209 | 55 | Pre no paper | | |
| | | PS201 | 56 | Sheet passage | | |
| | | PS202 | 57 | No sheet | | |
| | | PS203 | 58 | Sheet tray lower limit | OFF | ON |
| | | PS204 | 59 | Sheet tray upper limit | | |
| | | PS205 | 60 | Sheet size (small) | OFF no paper | ON with paper |
| | | PS206 | 61 | Sheet size (large) | | |
| | | PS207 | 62 | Paper exit cover open/close detection | Open | Close |
| FN-104/ FN-4 | | VR1 | 63 | Sheet width | Small size | Large size |
| | | MS1 | 64 | Interlock | Open | Close |
| TMG-1 | 76 | MS2 | M | 68: Trimmer front door interlock detection signal | | |
| | | PS110 | | 69: Upper limit | ON | OFF |
| | | PS111 | | 70: Lower limit | | |
| | | PS108 | | 71: Exit | | |
| | | PS107 | | 72: Paper scraps box detection | OFF | ON |
| | | PS109 | | 73: Paper scraps full | | |
| | | PS113 | | 74: Stacker full | | |
| | | — | | 75: Trimmer connection detection | Connected | Not connected |
| | | — | | 76: | — | — |
| | | — | | 77: | | |
| | | — | | 78: | | |
| | | — | | 79: | | |
| | | — | | 80: | | |
| | | — | | 81: | | |
| | | — | | 82: | | |
| | | — | | 83: | | |
| | | — | | 84: | | |
| | | — | | 85: | | |
| | | — | | 86: | | |
| | | — | | 87: | | |
| | | PS114 | | 88: Stacker door | Open | Close |
| ADU | 080 | PS9 | 1 | ADU paper conveyance detection signal | ON | OFF |
| | | PS46 | 2 | Paper at ADU exit detection signal | | |
| | | PS58 | 3 | ADU paper reversal detection signal | | |
| | | PS59 | 4 | ADU paper conveyance slowdown timing detection signal | | |
| | | PS10 | 5 | ADU handle release detection signal | | |
| | | PS13 | 6 | ADU no paper detection signal | | |
| | | PS60 | 7 | ADU paper feed detection signal | | |

47 ADJUSTMENT

[5] Output checklist

| Classification | Code | Symbol | Multi mode | Name | Cannot be set or changed in field |
|----------------|------|--------|------------|---|-----------------------------------|
| Analog signal | 000 | L1 | | *1 Exposure lamp | |
| | 001 | M15 | | Toner supply motor | |
| | 002 | HV1 | | Charging corona unit | x |
| | 003 | HV2 | | Transfer corona unit | x |
| | 004 | HV2 | | Separation corona unit (AC+DC) | |
| | 005 | | | Dmax LED | x |
| | 006 | | | g LED | x |
| | 007 | | | Jam detection LED | |
| | 008 | HV1 | | Transfer corona unit installation guide plate | x |
| | 009 | HV1 | | Bias | |
| Paper feed | 020 | | M | First paper feed SD 1: Tray 1 2: Tray 2 3: Tray 3 4: LCT 5: By-pass paper feed tray | |
| | 021 | | M | Paper feed MC 1: Tray 1 2: Tray 2 3: Tray 3 4: LCT 5: Vertical conveyance | |
| | 022 | | M | First paper feed MC 1: Tray 1 2: Tray 2 3: Tray 3 4: LCT | |
| | 023 | | M | Tray up motor /LCT UP/DOWN motor 1: Tray 1 2: Tray 2 3: Tray 3 4: LCT UP drive 5: LCT DOWN drive 6: By-pass UP 7: By-pass DOWN | |
| | 024 | | M | Lock SD 1: Tray 1 2: Tray 2 3: Tray 3 | |
| | 025 | MC1 | | Second paper feed MC | |
| | 026 | M6 | M | Loop roller drive motor 1: Fast forward 2: Slow forward 3: Fast backward 4: Slow backward | |
| | 027 | M5 | M | Paper reverse and eject roller drive motor 1: Fast 2: Slow | |
| | 028 | | M | 1: Paper feed motor 2: LCT paper feed motor | |
| | 029 | SD4 | | Separation claw SD | |

* **Caution:** When the START key is pressed, "Watch input?" **YES** **NO** appears. When **YES** or **NO** is selected for each code, the following operation is performed:

- *1 **YES** : Turns ON the exposure lamp and scanner cooling fan.
- NO** : Holds the exposure lamp ON for 10 minutes.

| Classification | Code | Symbol | Multi mode | Name | |
|----------------|------|---------|------------|--|--|
| Optics unit | — | — | | — | |
| | 031 | M13 | | *1 Scanner drive motor | |
| | 032 | M17 | M | *2 Polygon motor 0: 400 dpi 1:600dpi | |
| | 034 | | M | *3 Shading correction 0: 400 dpi 1:600dpi | |
| Main body | 040 | M1 | | Main motor | |
| | 041 | M2 | | Drum drive motor | |
| | 042 | | M | Fan motor 1: Scanner cooling fan 2: Write unit cooling fan (fast) 3: Write unit cooling fan (slow) 4: Developing suction (fast) 5: Developing suction (slow) 6: Main unit cooling fan 1 (fast) 7: Main unit cooling fan 1 (slow) 8: Main unit cooling fan 2 (fast) 9: Main unit cooling fan 2 (slow) 10: Main unit cooling fan 3 (fast) 11: Main unit cooling fan 3 (slow) 12: Fixing unit cooling fan | |
| | 043 | | M | Counter 1: Total counter 2: Key counter | |
| | 045 | M16 | M | 6: Cleaning web drive motor | |
| | 046 | M23 | M | Charger cleaning motor 0: To-and-fro operation 1: Move to rear 2: Move to front | |
| | 047 | M18 | M | Transfer/separaton cleaning motor 0: To-and-fro operation 1: Move to rear 2: Move to front | |
| | 048 | | | Control panel LED test (turn on all lights) | |
| | 049 | M18/M23 | | Charger cleaning or transfer/separation cleaning motor to-and-fro operation | |
| | | | | | |

* **Caution:** When the START key is pressed, "Watch input?" **YES** **NO** appears. When **YES** or **NO** is selected for each code, the following operation is performed:

*1 **YES** : Performs HP search and scanner to-and-fro operations.
NO : Moves the scanner 10 mm to the right.

*2 **YES** : Turns ON the polygon motor and write unit cooling fan.
NO : Turns ON the polygon motor for 30 seconds.

*3 **YES** : Performs HP search and shading operations.
NO : Moves the scanner 10 mm to the right.

47 ADJUSTMENT

| Classification | Code | Symbol | Multi mode | Name | Cannot be set or changed in field |
|----------------|------|--|------------|---|-----------------------------------|
| Main body | 050 | M2/M3/M14 | | Drum/developing/blade motor | |
| | 051 | PCL | | PCL | |
| | 052 | TSL | | TSL | |
| | 054 | M11 | | Toner supply motor/1 | |
| | 055 | - | | Message test | |
| | 056 | JAMIB | | Jam indicator board LED test (turn on all lights) | |
| RADF | 060 | M302 M302 M301 M301 M304 M304 M305 M305 M303 M303 SD302 SD301 SD303 SD304 FM301 | M | Drive (EDH-2) 1: Original feed motor (forward) 2: Original feed motor (backward) 3: Original conveyance motor (forward) 4: Original conveyance motor (backward) 5: Original exit motor 1 (forward) 6: Original exit motor 1 (backward) 7: Original exit motor 2 (forward) 8: Original exit motor 2 (backward) 9: Tray up motor (forward) 10: Tray upmotor (backward) 11: Pressure roller release SD 12: Flapper drive SD 13: Original exit gate SD 14: SDF switching SD 15: ADF fan | |
| FN-104/FN-4 | 075 | M1 M2 M2 M2 M3 M3 M3 M5 M7 M7 M8 M8 M21/M22 M21/M22 M23/M24 M23/M24 M11 M11 M13 M14 | M | Drive (FN-104/FN-4/Cover Inserter A) 1: FNS conveyance motor 2: Roller shift motor (HP search) 3: Roller shift motor (shift position transfer) 4: Roller shift motor (1 rotation) 5: Tray up-down motor (HP search) 6: Tray up-down motor (Move to lower limit) 7: Tray up-down motor (Up-down operation with only few sheets at staple mode) 8: Alignment plate motor/ upper (HP search) 9: Paper exit roller motor (staple mode HP search) 10: Paper exit roller motor (reverse rotation) 11: Paper exit opening motor HP search 12: Paper exit opening motor open slot transfer 13: Stapler unit (R) (initial) 14: Stapler unit (R) (staple operation) 15: Stapler unit (F) (initial) 16: Stapler unit (F) (staple operation) 17: Stapler movement motor HP search (Move to double staple position) 18: Stapler movement motor (Move to single staple position for A4 or 8.5x11) 19: Stacker entrance motor 20: Stapling and folding stopper motor (HP search) | |

| Classification | Code | Symbol | Multi mode | Name | Cannot be set or changed in field |
|---------------------|------|--------|------------|---|-----------------------------------|
| FN-104/FN-4 | 075 | M15 | M | 21: Alignment plate motor/lower (HP search) | |
| | | M18 | | 22: Folding stopper motor (HP search) | |
| | | M19 | | 23: Folding knife motor (HP search) | |
| | | M20 | | 24: Folding conveyance motor | |
| | | M17 | | 25: Stapling and folding stopper release motor (HP search) | |
| | | M17 | | 26: Stapling and folding stopper release motor (set) | |
| | | M17 | | 27: Stapling and folding stopper release motor (release) | |
| | | SD1 | | 28: Gate solenoid | |
| | | SD2 | | 29: Sub-tray paper exit solenoid | |
| | | SD4 | | 31: Paper exit opening solenoid | |
| | | SD5 | | 32: By-pass solenoid | |
| | | M5 | | 33: Alignment plate motor /upper Open (A4 or 8.5x11 position) enable only from HP position | |
| | | M5 | | 34: Alignment plate motor /upper Close (A4 or 8.5x11 position) enable only from HP position | |
| | | M5 | | 35: Alignment plate motor/upper rocking (enable only from Open position) | |
| | | M15 | | 36: Alignment plate motor/lower Open (A4 or 8.5x11 position) enable only from HP position | |
| | | M15 | | 37: Alignment plate motor/lower Close (A4 or 8.5x11 position) enable only from HP position | |
| | | M15 | | 38: Alignment plate motor/lower rocking (enable only from Open position) | |
| | | M14 | | 39: Stapling and folding stopper motor (Move to A4R or 8.5x11R position transfer) | |
| | | M18 | | 40: Folding stopper motor (A4R or 8.5x11R position transfer) | |
| TMG-1 | | M101 | | 55: Conveyance motor | |
| | | M102 | | 56: Trimmer motor (forward) | |
| | | M102 | | 57: Trimmer motor (backward) | |
| | | M103 | | 58: Stopper motor (HP search) | |
| | | M104 | | 59: Stopper release motor (HP search) | |
| | | M104 | | 60: Stopper release motor (release) | |
| | | M104 | | 61: Stopper release motor (setting) | |
| | | M105 | | 62: Press motor (HP search) | |
| Cover Insertor A | | M105 | | 63: Press motor (press) | |
| | | MC201 | | 64: Paper feed clutch | |
| | | M201 | | 65: Sheet tray motor HP search (Move to lower limit) | |
| | | M201 | | 66: Sheet tray motor (Move to upper limit) | |
| TMG-1 | | SD201 | | 67: Paper feed solenoid | |
| | | M107 | | 68: Pusher motor (HP search) | |
| | | M107 | | 69: Pusher motor (pusher release) | |
| | | M106 | | 70: Holder motor (HP search) | |
| TMG-1 | | M106 | | 71: Holder motor (Move to lower limit) | |
| | | | | | |

47 ADJUSTMENT

| Classification | Code | Symbol | Multi mode | Name | Cannot be set or changed in field |
|--------------------------|------|--------|------------|--|-----------------------------------|
| FN-104/FN-4 | 075 | | M | 72:— 73:— 74:— 75:— 76:— 77:— 78:— 79:— 80:— 81:— 82:— 83:— 84:— 85:— 86:— 87:— 88:— 89:— 90:— 91:— 92:— 93:— 94:— 95:— 96:— 97:— 98:— 99:FNS Paper less running mode | |
| | | | | 1: Paper gate solenoid 2: ADU lock solenoid 3: Fixing guide solenoid | |
| | 080 | | M | ADU paper feed MS | |
| | 081 | MC2 | | Pre-transfer roller drive motor | |
| | 082 | M9 | | Second paper feed motor | |
| | 083 | M12 | | ADU reversal motor 1: Fast forward 2: Slow forward 3: Fast backward | |
| | 084 | M7 | M | ADU conveyance motor 1: Fast 2: Slow | |
| | 085 | M8 | M | Reverse and eject motor 1: Fast forward 2: Slow forward 3: Fast backward | |
| | 086 | M5 | M | Factory initial set (field use prohibited) | x |
| | 092 | | | — | |
| | 093 | | | Adjust mode list display mode | |
| | 094 | | | Factory shipment completion set (field use prohibited) | x |
| | 096 | | | Electronic RDH DIMM capacity check | |
| | 097 | | | Electronic RDH DIMM check | |
| | 098 | | | 1: HDD total capacity check 2: HDD remaining capacity check 3: HDD bad sector check/recovery | |
| | 099 | | M | | |
| ADU | | | | | |
| | | | | | |
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| Adjustment process, etc. | | | | | |
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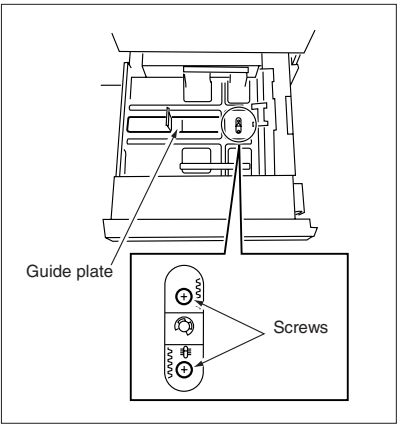
| Classification | Code | Symbol | Multi mode | Name | Cannot be set or changed in field |
|----------------|------|--------|------------|--|-----------------------------------|
| ADU | 080 | | M | 1: Paper gate solenoid 2: ADU lock solenoid 3: Fixing guide solenoid | |
| | 081 | MC2 | | ADU paper feed MS | |
| | 082 | M9 | | Pre-transfer roller drive motor | |
| | 083 | M12 | | Second paper feed motor | |
| | 084 | M7 | M | ADU reversal motor 1: Fast forward 2: Slow forward 3: Fast backward | |
| | 085 | M8 | M | ADU conveyance motor 1: Fast 2: Slow | |
| | 086 | M5 | M | Reverse and eject motor 1: Fast forward 2: Slow forward 3: Fast backward | |
| OTHERS | 092 | | | Factory initial set (field use prohibited) | ∞ |
| | 093 | | | — | |
| | 094 | | | Adjust mode list display mode | |
| | 096 | | | Factory shipment completion set (field use prohibited) | ∞ |
| | 097 | | | Electronic RDH DIMM capacity check | |
| | 098 | | | Electronic RDH DIMM check | |
| | 099 | | M | 1: HDD total capacity check 2: HDD remaining capacity check 3: HDD bad sector check/recovery | |

OTHER ADJUSTMENTS

[1] Centering Adjustment

Caution: Centering adjustment need not be performed normally because paper inclination is detected in the second paper feed section and original image is corrected in the image processing unit to fit an inclined paper. Centering adjustment is required only when the detected paper inclination is not within the automatic image correction range.

1. **Tool**
 - Screwdriver (Phillips)
2. **Tray 1/2/3 centering adjustment**

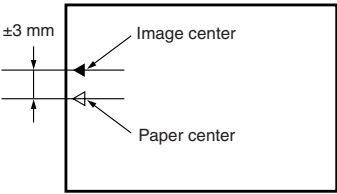


a. Adjustment method

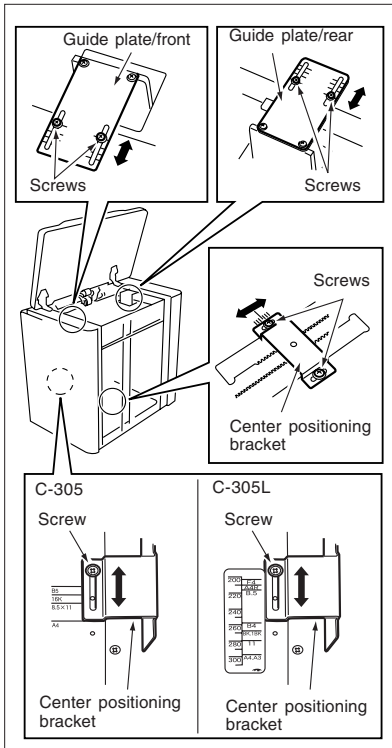
| Step | Operation |
|------|---|
| 1 | Draw out the tray. |
| 2 | Loosen the two screws at the center of the tray. |
| 3 | Slide the guide plate to adjust the center position. |
| 4 | Tighten the two screws securely. |
| 5 | Insert the tray and make a copy to check the result. |
| 6 | Perform steps 1-5 repeatedly until mis-centering is included in the automatic adjustment range (± 3 mm). |

Caution: Disable the mis-centering correction function by setting the dip switch 12-3 and confirm it. Confirm it using the internal pattern No.16.(Enter 1 to set to ON)

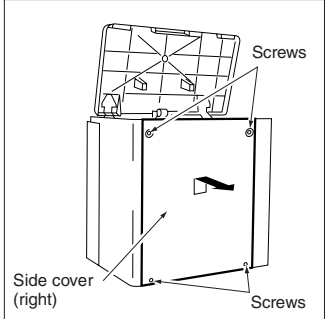
Standard value of mis-centering: ± 3 mm



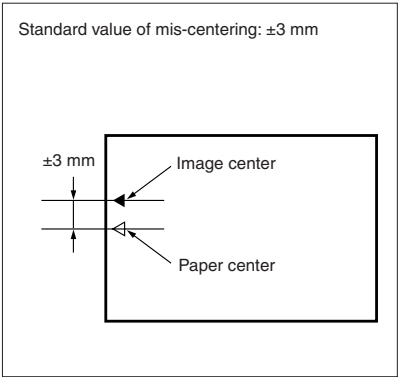
3. LCT tray centering adjustment



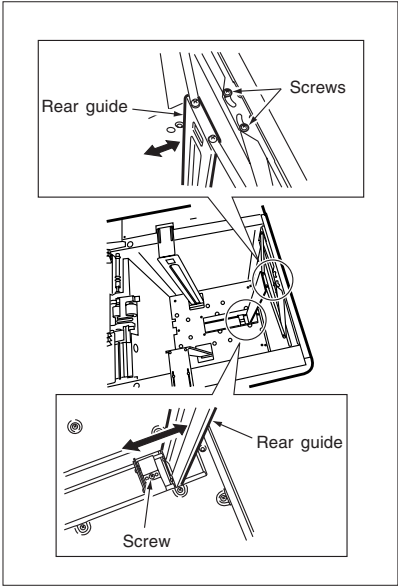
a. Adjustment method

| Step | Operation |
|------|--|
| 1 | Move the paper up/down plate. |
| 2 | Open the top cover. |
| 3 | Remove the four screws to detach the side cover (right).  |
| 4 | Loosen the two screws to slide the upper and lower guide plates the same amount in the same direction. |
| 5 | Secure the upper and lower guide plates by tightening two screws firmly. |
| 6 | Loosen the two screws to slide the center positioning bracket in the same manner as for the upper and lower guide plates (same amount and same direction). |
| 7 | Secure the centering piece by tightening two screws firmly. |
| 8 | Put the LCT back into the original position and make a copy to check the result. |
| 9 | Perform steps 1-8 repeatedly until mis-centering is included in the automatic adjustment range (± 3 mm). |

Caution: Disable the mis-centering correction function by setting the dip switch 12-3(DIPSW12-3) and confirm it. Confirm it using the internal pattern No.16.(Enter 1 to set to ON)



4. Setting the LCT Rear Guide (C-305L only)



a. Adjustment Method

| Step | Operation |
|------|---|
| 1 | Open the top cover. |
| 2 | Press the SW100(LT tray down switch) to lower the up/down plate to the bottom. |
| 3 | Loosen the two screws at the top of the rear guide and one screw at the bottom. |
| 4 | Set paper on the up/down plate, align the trailing edge of paper with the lower end of the rear guide, then fasten the lower screw. |
| 5 | Fasten the two upper screws temporarily and move the up/down plate to the highest position. |
| 6 | Set paper on the up/down plate, align the trailing edge of paper with the upper end of the rear guide, then tighten the two upper screws finally. |

Reference: LCT tray size setting can be performed in the key operator mode by setting the DIPSW21-1 to 1 in the 25 mode .

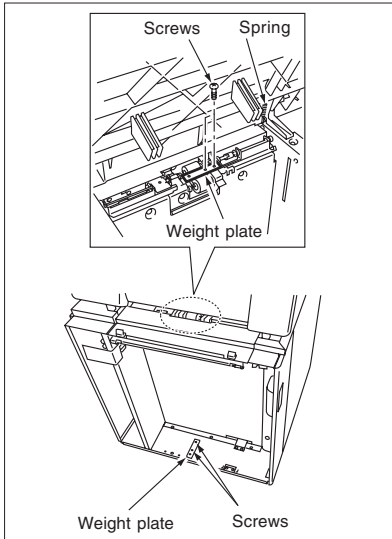
[2] Adjusting the LCT Paper Feed Roller Pressure (C-305L only)

Caution: This adjustment is required when no feed of paper occurs.

1. Tool

- Screwdriver (Phillips)

2. Adjustment Method



| Step | Operation |
|------|---|
| 1 | Open the jam access door . |
| 2 | Remove the two screws to remove the weight plates. |
| 3 | Open the top cover. |
| 4 | Remove the spring. |
| 5 | Install a weight plate above the paper feed rollers using the two screws removed in step 2. |
| 6 | Close the jam access door and make a copy to check whether paper is fed properly. |
| 7 | If paper is not fed properly, add another weight plate and repeat steps 5 and 6. |

Caution: Four weight plates come standard with the LCT, and can be installed up to six.

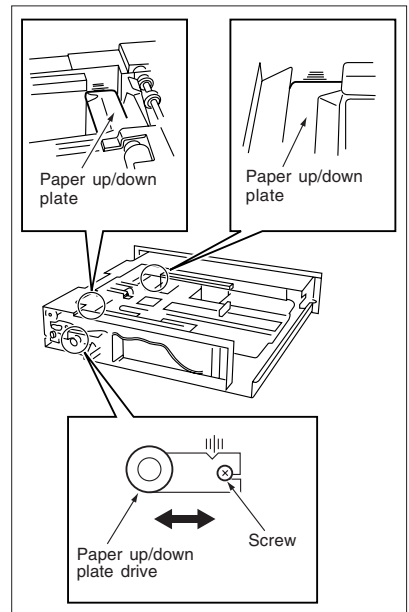
[3] Paper up/down plate horizontal adjustment

Caution: Paper up/down plate horizontal adjustment must be carried out when a paper feed jam occurs frequently or after replacement of the up/down wires of a tray.

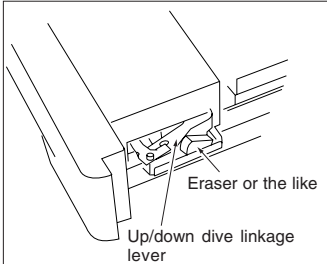
1. Tool

- Screwdriver (Phillips)

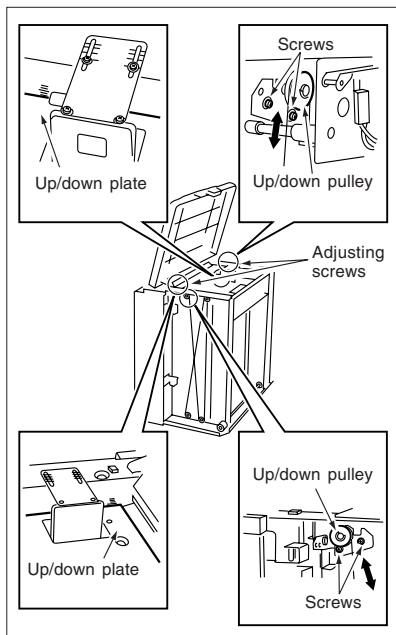
2. Tray 1/2/3 paper up/down plate horizontality adjustment



a. Adjustment Method

| Step | Operation |
|------|---|
| 1 | To remove the tray with the up/down plate up, set the tray with a small thing (eraser, etc.) inserted under the up/down drive linkage lever.  <p>Eraser or the like Up/down drive linkage lever</p> |
| 2 | Make sure that the up/down plate has moved up by hearing the motor sound, then draw out the tray. |
| 3 | Remove the two screws to remove the tray from the left and right guide rails. |
| 4 | Loosen a screw and adjust the position of the up/down pulley so that the front and rear ends of the up/down plate are at the same height. |
| 5 | Secure the up/down pulley by tightening the screw firmly. |
| 6 | Secure the tray on the guide rails. |
| 7 | Set the tray. |

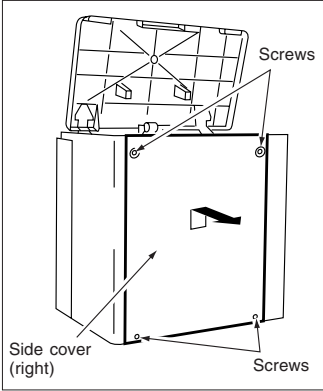
3. LCT Up/Down Plate Horizontality Adjustment



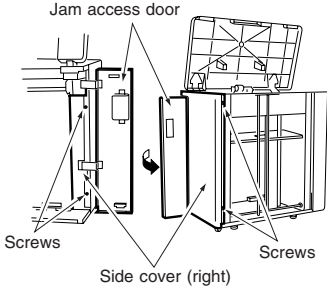
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a. Adjustment Method

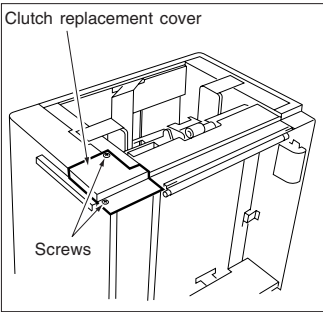
| Step | Operation |
|------|--|
| 1 | Raise the up/down plate. |
| 2 | Open the top cover. |
| 3 | Remove the four screws to detach the side cover (right). |



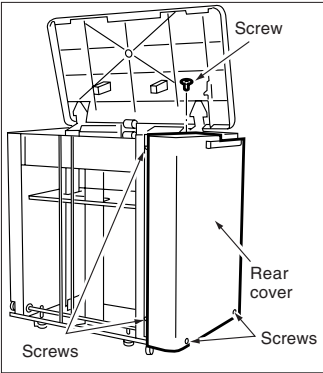
| | |
|---|--|
| 4 | Open the jam access door, then remove the four screws to detach the front cover. |
|---|--|



| | |
|---|---|
| 5 | Remove the two screws to detach the clutch replacement cover. |
|---|---|



| | |
|---|--|
| 6 | Remove the five screws to detach the rear cover. |
|---|--|



| | |
|---|--|
| 7 | Loosen the two screws and adjust the position of each paper up/down plate drive pulley using an adjustment screw so that the front and rear of the paper up/down plate are at the same height. |
| 8 | Secure the paper up/down plate drive pulleys by tightening the two screws (per up/down pulley) . |
| 9 | Install the rear cover, clutch replacement cover, front cover, and side cover (right). |

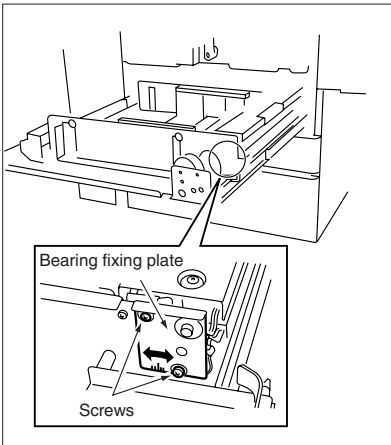
[4] Skew Adjustment

Caution: Tilt adjustment must be performed when the paper supplied from the current tray is different from the paper supplied from other trays in the way they are skewed. However, since tilt of paper supplied from all trays is corrected in the second paper feed unit, this adjustment have little effect.

1. Tool

- Screwdriver (Phillips)

2. Adjustment of angle of conveyance roller of tray 1/2/3



a. Adjustment method

| Step | Operation |
|------|--|
| 1 | Draw out the tray and detach the front cover. |
| 2 | Loosen the two screws to slide the bearing fixing plate. |
| 3 | Secure the fixing plate by tightening the two screws. |
| 4 | Install the front cover and set the tray. |

3. LCT Skew Adjustment

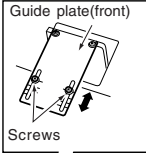
a. Adjustment Method (when All Printed Sheets are Skewed)

| Step | Operation |
|------|---|
| 1 | Print a test pattern (No.16) in the continuous copy mode to check for skew. |
| 2 | Open the jam access door of the LCT and adjust the installation position of the positioning bracket on the bottom plate. <div> </div> |

b. Adjustment Method (when Some of Printed Sheets are Skewed Irregularly)

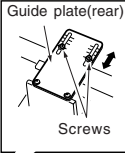
| Step | Operation |
|------|---|
| 1 | Print a test pattern (No.16) in the continuous copy mode to check for skew. |
| 2 | Remove the side cover (right). |
| 3 | Loosen the five screws securing the guide plates (front and rear) and the centering positioning bracket temporarily. Press the guide plates (front and rear) against paper, then tighten the five screws. |

Guide plate(front)

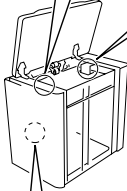


Screws


Guide plate(rear)



Screws

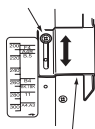


C-305 Screw



Centering positioning bracket

C-305L Screw



Centering positioning bracket

Reference: The indicated size of each guide plate is about 2 mm wider than the size of regular paper. The 2 mm gap may cause paper skew depending on the paper type. To reduce this skew, press the guide plates (front and rear) against paper tightly.

4. ADU (Rear side) Skew Adjustment

a. Adjustment Method

| Step | Operation |
|------|---|
| 1 | Draw out the ADU stand and detach the ADU cover. |
| 2 | Loosen the two screws to slide the pre-registratin roller unit installation position. |
| 3 | Secure the fixing plate by tightening the two screws firmly. |
| 4 | Install the ADU cover and set the ADU stand. |

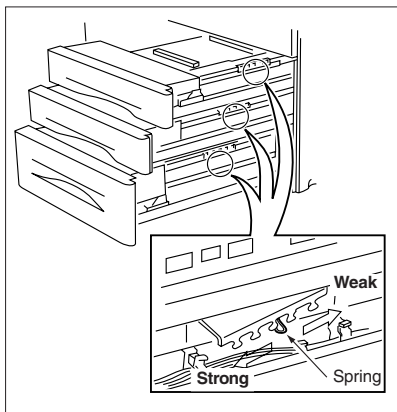
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[5] Tray Spring Pressure Adjustment

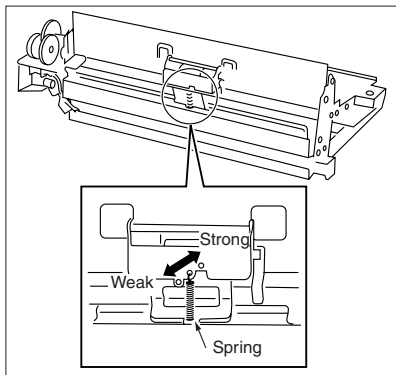
Caution: Tray spring pressure adjustment must be performed when no feed or double feed of paper occurs. Tray spring pressure may be affected by a type of paper used or operating environment (under the low temperature condition, no feed of paper tends to occur). Under the high temperature condition, double feed of paper tends to occur. Excessive adjustment of tray spring pressure may exacerbate the problem. Take care.

1. Tools

- Screwdriver (Phillips)
- Flat-nose pliers

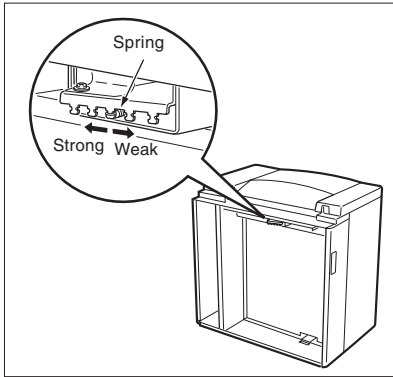
2. Tray 1/2/3 spring pressure adjustment**a. Adjustment method**

| Step | Operation |
|------|---|
| 1 | Draw out the tray. |
| 2 | Change the spring hooking position. Weak: Double feed is prevented. Strong: No feed is prevented. Reference: The spring load changes about 10% each time the spring is hooked in the next slit. |
| 3 | Set the tray. |

3. Bypass paper feed spring pressure adjustment**a. Adjustment method**

| Step | Operation |
|------|---|
| 1 | Disconnect LCT form the main unit. |
| 2 | Change the spring hooking position. Weak: Double feed is prevented. Strong: No feed is prevented. Reference: The spring load changes about 15% each time the spring is hooked in the next slit. |
| 3 | Connect LCT back to the main unit. |

4. LCT spring pressure adjustment



a. Adjustment method

| Step | Operation |
|------|---|
| 1 | Remove the LCT from the main body. |
| 2 | Change the spring hooking position. Weak: Double feed is prevented. Strong: No feed is prevented. Reference: The spring load changes about 10% each time the spring is hooked in the next slit. |
| 3 | Install the LCT. |

[6] Paper Feed Height (Upper Limit) Adjustment

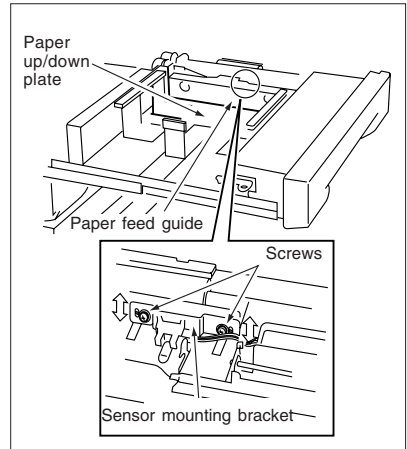
Caution 1: Paper feed height (upper limit) adjustment must be performed when no paper feed occurs, when the leading edge of the fed paper is folded or when a convexly curled paper is fed. To perform this adjustment, move the upper limit sensor mounting bracket vertically.

Caution 2: This adjustment may affect the release amount of the pick-up so that [7] pick-up roller release amount adjustment must be performed after this adjustment.

1. Tools

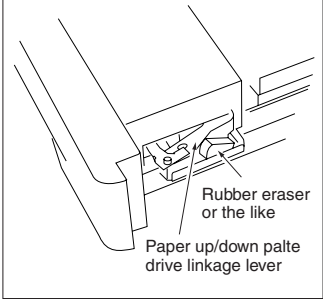
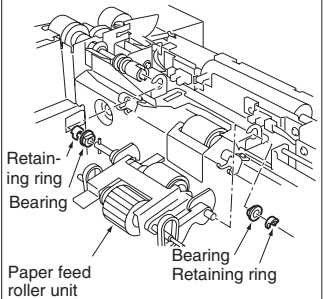
- Screwdriver (Phillips)
- Scale

2. Adjustment of paper feed height (upper limit) of tray 1/2/3



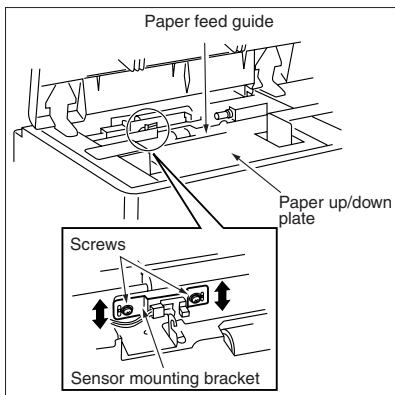
OTHER ADJUSTMENT

a. Adjustment method

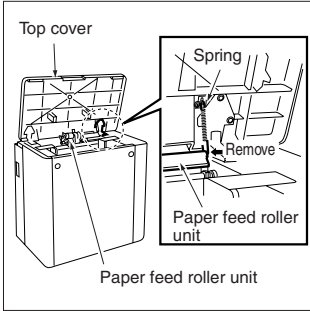
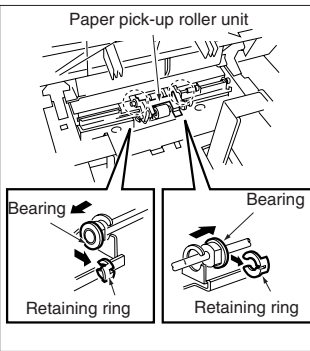
| Step | Operation |
|------|--|
| 1 | <p>To draw out the tray with the paper up/down plate held up, set the tray with a rubber eraser or the like inserted under the paper up/down plate drive linkage lever.</p>  <p>Rubber eraser or the like Paper up/down plate drive linkage lever</p> |
| 2 | Make sure the paper up/down plate has moved up by hearing the motor sound, then draw out the tray. |
| 3 | Place the paper feed roller unit upright. |
| 4 | <p>Measure the distance between the top surfaces of the paper feed guide and paper up/down plate and check whether it is within specifications.</p> <p>Standard value: 2-5 mm</p> <p>If the leading edge of the paper is folded irrespective of whether the above distance is within specifications, perform steps 5 and later.</p> |
| 5 | Loosen the four screws to detach the conveyance cover. |
| 6 | <p>Remove the two retaining rings to slide the two bearings outward, then remove the paper feed roller unit.</p>  <p>Retaining ring Bearing Paper feed roller unit Bearing Retaining ring</p> |

| | |
|----|--|
| 7 | Remove the two screws securing the sensor mounting bracket and install them in the outside mounting holes (oblong holes) temporarily. |
| 8 | <p><When the heights are not within specifications></p> <p>Adjust the position of the sensor mounting bracket vertically so that the distance between the top surfaces of the entrance guide and paper up/down plate is within the specifications.</p> <p>Larger than the standard value: Lower the sensor mounting bracket (Raise the paper up/down plate).</p> <p>Less than the standard value: Raise the sensor mounting bracket (Lower the paper up/down plate).</p> <p><When any fault has occurred></p> <p>Folded leading edge of paper: Raise the sensor mounting bracket.</p> <p>Convexly curled paper: Lower the sensor mounting bracket.</p> |
| 9 | Install the paper feed roller unit and paper conveyance unit cover. |
| 10 | Set the tray. |

3. Adjustment of paper feed height (upper limit) of LCT



a. Adjustment method

| Step | Operation |
|------|--|
| 1 | Move the paper up/down plate up. |
| 2 | Open the top cover. |
| 3 | <p>Measure the distance between the top surfaces of the paper feed guide and paper up/down plate and check whether it is within specifications.</p> <p>Standard value: 2 ~ 5 mm</p> <p>If the leading edge of the paper is folded irrespective of whether the above distance is within specifications, perform steps 5 and later.</p> |
| 4 | <p>Remove the spring from the paper pick-up roller unit.</p>  <p>The diagram shows a top-down view of the paper feed roller unit with the top cover open. A callout box shows a close-up of the spring being removed from the unit. Labels include 'Top cover', 'Spring', 'Remove', and 'Paper feed roller unit'.</p> |
| 5 | <p>Remove the two retaining rings to slide the two bearings outward, then remove the paper feed roller unit.</p>  <p>The diagram shows a side view of the paper pick-up roller unit. Two retaining rings are shown being removed from the unit, which will allow the two bearings to be slid outward. Labels include 'Paper pick-up roller unit', 'Bearing', and 'Retaining ring'.</p> |

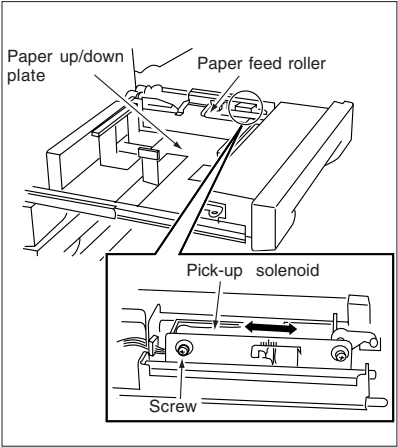
| | |
|---|---|
| 6 | Remove the two screws securing the sensor mounting bracket and install then in the outside mounting holes (oblong holes) temporarily. |
| 7 | <p><When the heights are not within specifications></p> <p>Adjust the position of the sensor mounting bracket vertically so that the distance between the top surfaces of the paper feed guide and paper up/down plate is within the specifications.</p> <p>When raising the height of the paper up/down plate: Lower the sensor mounting bracket.</p> <p>When lowering the height of the paper up/down plate: Raise the sensor mounting bracket.</p> <p><When any fault has occurred></p> <p>Folded leading edge of paper: Raise the sensor mounting bracket.</p> <p>Convexly curled paper: Lower the sensor mounting bracket.</p> |
| 8 | Install the paper feed roller unit and spring. |
| 9 | Close the top cover. |

OTHER ADJUSTMENT

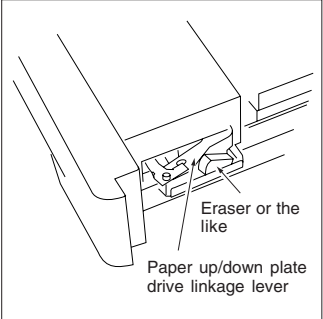
[7] Pick-up Release Amount Adjustment

Caution: Pick-up release amount adjustment must be performed when a no-feed jam occurs frequently. To perform this adjustment, adjust the mounting position of the pick-up solenoid.

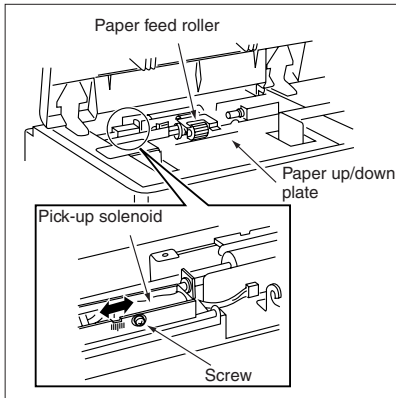
- 1. Tools**
 - Screwdriver (Phillips)
 - Scale
- 2. Adjustment of pick-up release amount of tray 1/2/3**



a. Adjustment method

| Step | Operation |
|------|---|
| 1 | <p>To draw the tray with the paper up/down plate held up, set the tray with an eraser or the like inserted under the paper up/down plate drive linkage lever.</p>  |
| 2 | <p>Make sure the paper up/down plate has moved up by hearing the motor sound, then draw out the tray.</p> |
| 3 | <p>Pull the movable portion of the pick-up solenoid and check whether the distance between the bottom of the paper feed roller and the top surface of the paper up/down plate is within specifications. Standard value: 0.5 to 2.5 mm. If the distance is not within specifications, perform steps 4 and later.</p> |
| 4 | <p>Loosen one screw and adjust the mounting position of the pick-up solenoid.</p> <p>Caution: Take a note to remember the initial mounting position.</p> |
| 5 | <p>Secure the pick-up solenoid by tightening the screw.</p> |
| 6 | <p>Set the tray.</p> |

3. Adjustment of pick-up release amount of LCT



a. Adjustment method

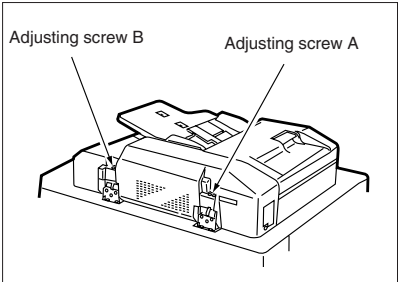
| Step | Operation |
|--|--|
| 1 | Move the paper up/down plate up. |
| 2 | Open the top cover. |
| 3 | Remove the spring from the paper pick-up roller unit. |
| <p>The diagram shows the top cover of the device open. A callout box provides a close-up of the Paper feed roller unit, where a spring is being removed. Labels include 'Top cover', 'Spring', 'Remove', and 'Paper feed roller unit'.</p> | |
| 4 | <p>Pull the movable portion of the pick-up solenoid and check whether the distance between the bottom of the paper feed roller and the top surface of the paper up/down plate is within specifications. Standard value: 0.5 to 2.5 mm If the distance is not within specifications, perform steps 5 and later.</p> |
| 5 | <p>Loosen one screw to adjust the mounting position of the pick-up solenoid. Caution: Take a note to remember the initial mounting position.</p> |
| 6 | Secure the pick-up solenoid by tightening the screw. |
| 7 | Install the spring. |
| 8 | Close the top cover. |

[8] RADF Mounting Position Adjustment

1. Tool

- Screwdriver (Phillips)

2. Adjustment method

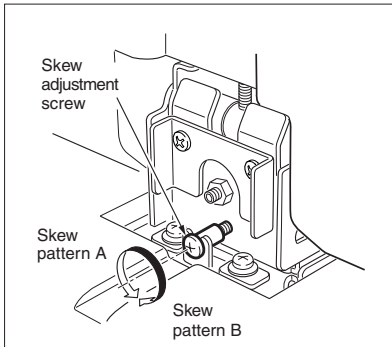


| | |
|---|--|
| 3 | If both stopper pieces do not touch the slit glass, make adjustments using adjusting screws A and B alternately. |
| 4 | Perform steps 2 and 3 repeatedly until the two stopper pieces touch the slit glass at the same time. |



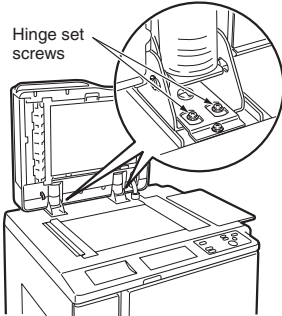
| Step | Operation |
|------|--|
| 1 | Close the RADF. |
| 2 | <p>Check whether both stopper pieces on the RADF side touch the slit glass.</p> <p>Caution: The state of contact between the stopper pieces and the slit glass can be checked by looking into the slits in the top cover (middle) of the main unit.</p> <p>The diagram shows the top cover (middle) of the main unit. It features two 'Stopper piece's and a 'Slit glass'. Below the main unit, there are two inset diagrams showing 'Slit' details. The main unit is labeled 'Top cover (middle)'.</p> |

[9] RADF Skew Adjustment**1. Tools**

- Screwdriver (Phillips)

2. Adjustment method

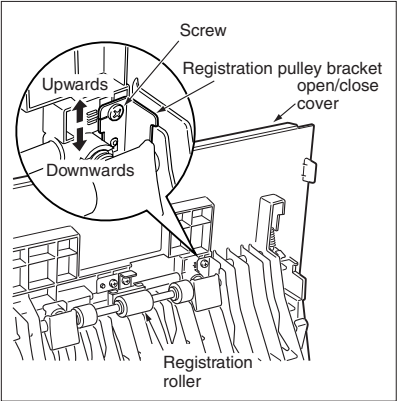
| | |
|---|---|
| 4 | Close the RADF, turn the skew adjustment screws and adjust the skew. For skew pattern A: Turn the skew adjustment screw counterclockwise. For skew pattern B: Turn the skew adjustment screw clockwise. |
| 5 | Make a test copy and check the skew. |
| 6 | Tighten the four hinge securing screws (two on both the left and right.) |
| 7 | Make adjustment by repeating steps 3 to 6. |

| Step | Operation |
|------|--|
| 1 | Set A3 or 11x17 paper into the tray1. |
| 2 | Set the adjustment chart on the RADF, make a copy, and check the skew. Standard value: within $\pm 0.3\%$ <div style="display: flex; align-items: center;"> <div style="text-align: right; margin-right: 10px;">Feed direction ←</div> <div style="display: flex; gap: 20px;">   </div> <div style="display: flex; gap: 20px; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px 5px;">Skew pattern A</div> <div style="border: 1px solid black; padding: 2px 5px;">Skew pattern B</div> </div> <p>Perform the following adjustment if the skew is beyond the standard value.</p> </div> |
| 3 | Open the RADF and loosen the four hinge set screws (two on both the left and right).  |

[10] RADF Paper Skew Adjustment

1. Face (side 1) of original paper skew

Note: Always perform this adjustment after completing the RADF skew adjustment. (Refer to the previous page.)

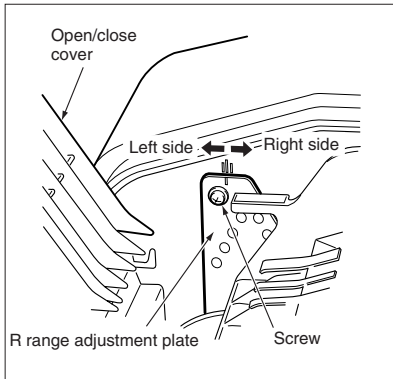


| Step | Operation |
|------|---|
| 4 | <p>Move the registration pulley bracket one calibration in the direction below according to the paper skew pattern.</p> <p>For skew in pattern A: Move the registration pulley bracket downwards (direction down with original feed flow).</p> <p>For skew in pattern B: Move the registration pulley bracket upwards (direction up towards original feed flow).</p> <p>Note: Make sure that the registration pulley shaft does not touch the open/close cover spring holder unit.</p> |
| 5 | <p>Repeat steps 2 to 4 until the original skew is within specified range (0.5% or less)</p> |

Specified range: Paper skew $\pm 0.5\%$ or less
(Paper skew in the paper feed direction)

| Step | Operation |
|------|--|
| 1 | <p>Make a copy in the single sided to single sided copy mode, then check the skew of the original. (Either pattern A or B)</p> <div><p>Image</p><p>Copy paper feed direction</p><p>Copy paper</p><div><div>Paper skew pattern A</div><div>Paper skew pattern B</div></div></div> |
| 2 | <p>Open the open/close cover.</p> |
| 3 | <p>Loosen the retaining screw to release the registration pulley bracket.</p> |

2. Back side (side 2) of original paper skew adjustment



| Step | Operation |
|------|---|
| 4 | <p>Move the R range adjustment plate one calibration in the direction below according to the paper skew pattern.</p> <p>For skew in pattern A: Move the R range adjustment plate to left side.</p> <p>For skew in pattern B: Move the R range adjustment plate to right side.</p> |
| 5 | Repeat steps 2 to 4 until the original skew is within specified range (0.5% or less) |

Specified range: Paper skew $\pm 0.5\%$ or less
(Paper skew in the paper feed direction)

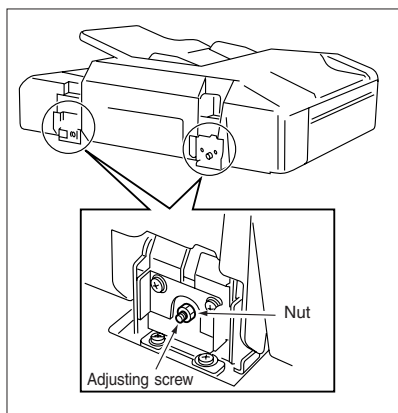
| Step | Operation |
|------|---|
| 1 | <p>Make a copy in the double sided \rightarrow single sided copy mode, then check the skew of the original. (Either pattern A or B)</p> <div style="text-align: center;"> </div> |
| 2 | Open the open/close cover. |
| 3 | Loosen the set screw and release the R range adjustment plate. |

[11] RADF Hinge Spring Pressure Adjustment

1. Tools

- Screwdriver (slotted)
- Wrench or flat-nose pliers

2. Adjustment method



| Step | Operation |
|------|--|
| 1 | Close the RADF. |
| 2 | Loosen the nut on the left side and the nut on the right side. |
| 3 | Open the RADF. |
| 4 | Turn the adjusting screws to adjust the pressure of hinge springs. Tightening (turning clockwise): Spring pressure reduces. Loosening (turning counterclockwise): Spring pressure increases. |
| 5 | Close the RADF. |
| 6 | Tighten the nut on the left side and the nut on the right side. |

[12] FNS Adjusting the Magnets on Conveyance Guide Plate B

1. Tool used

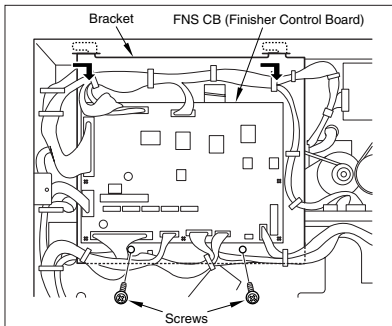
- Phillips-head screwdriver

2. Preparation

- (1) Open the front cover.
- (2) Check whether conveyance guide plate B makes contact with the cushioning rubber when the magnets are stuck to conveyance guide plate A.
- (3) If plate B does not make contact with the cushioning rubber, remove the rear cover and carry out adjustment as described below.

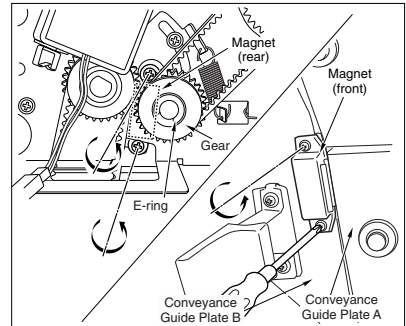
3. Adjustment Procedure

- (1) Detach all FNS CB (FNS control board) connectors.
- (2) Remove the 2 set screws holding the FNS CB in place. Remove the FNS CB together with its bracket.



- (3) Loosen the 4 magnet-holding set screws (two at the front and two at the back), and move conveyance guide plate B all the way in the direction indicated by the arrow.

- (4) Remove the E-ring and the gear.
- (5) Adhere the magnets to conveyance guide plate A and retighten the set screws.



- (6) Reassemble in opposite sequence to removal.

[13] FNS Adjusting the Magnets on Conveyance Guide Plate C

1. Tool used

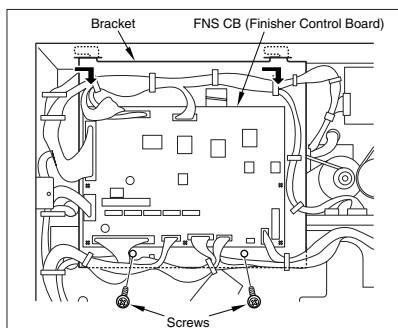
- Screwdriver (Phillips)

2. Preparation

- (1) Open the front cover.
- (2) Check whether conveyance guide plate C makes contact with the cushioning rubber when the magnets are stuck to conveyance guide plate D.
- (3) If conveyance guide plate C does not make contact with the cushioning rubber, remove the rear cover and carry out adjustment as described below.

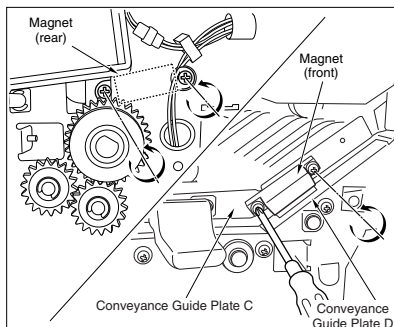
3. Adjustment Procedure

- (1) Detach all FNS CB (FNS control board) connectors.
- (2) Remove the 2 set screws holding the FNS CB in place. Remove the FNS CB together with its bracket.



- (3) Loosen the 4 magnet-holding set screws (two at the front and two at the back), and move conveyance guide plate C all the way in the direction indicated by the arrow.

- (4) Adhere the magnets to conveyance guide plate A and retighten the screws.



- (5) Reassemble in opposite sequence to removal.

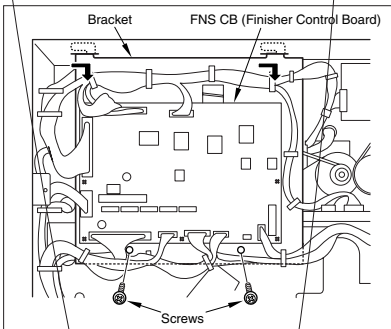
[14] FNS Adjusting the Sub-tray Paper Exit Gate

1. Tools used

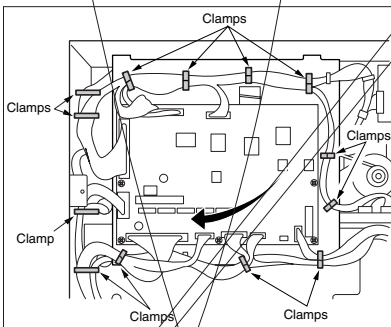
- Phillips-head screwdriver
- Scale

2. Preparation

- (1) Remove the 2 set screws holding the FNS CB (FNS control board) in place. Remove the FNS CB together with its bracket.



- (2) Remove the wirings from the clamps, and move the FNS CB together with its bracket.

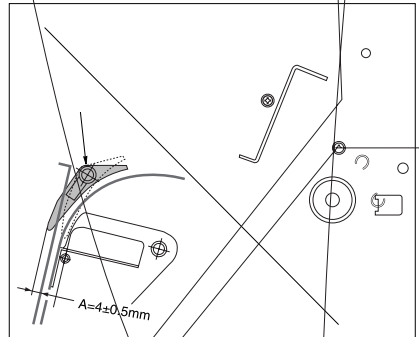


- (3) With SD2 (sub-tray paper exit) OFF, measure the gap between the sub-tray gate and the guide plate (indicated by A in the illustration).

Spec value for gap: $A = 4 \pm 0.5\text{mm}$.

- (4) With SD2 ON, measure the gap between the solenoid plunger and the bracket stopper (indicated by B in the illustration).

Spec value for gap: $B = 5 \pm 0.5\text{mm}$.



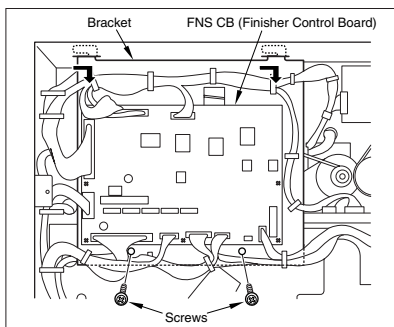
[15] FNS Adjusting the Paper-Path Switching Gate

1. Tools used

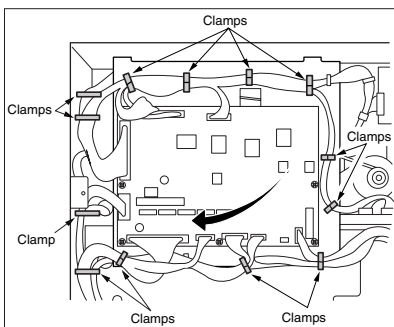
- Screwdriver (Phillips)
- Scale

2. Preparation

- (1) Remove the following parts.
 - Rear cover
 - Top cover
 - Cover Inserter A (if installed)
- (2) Remove the 2 set screws holding the FNS CB (FNS control board) in place. Remove the FNS CB together with its bracket.



- (3) Remove the wirings from the clamps, and move the FNS CB together with its bracket.

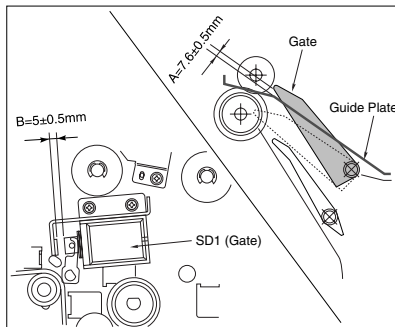


- (4) With SD1 (gate) ON, measure the distance between the long gate and the guide plate, indicated by A in the illustration.

Spec value for distance: $A = 7.6 \pm 0.5 \text{ mm}$.

- (5) Again with SD1 ON, measure the gap between the solenoid plunger and the bracket stopper (indicated by B in the illustration).

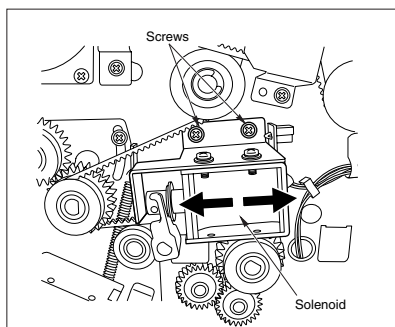
Spec value for gap: $B = 5 \pm 0.5 \text{ mm}$.



- (6) If either measurement is out of spec, carry out adjustment as described below.

3. Adjustment Procedure

- (1) Loosen the 2 set screws holding the solenoid in place, and move the solenoid as necessary to adjust.



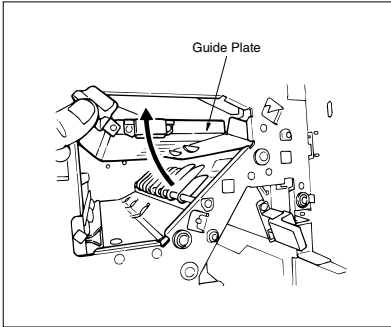
- (2) Retighten the screws.
- (3) Reassemble in the opposite sequence to removal.

[16] FNS Adjusting the By-pass Gate**1. Tools used**

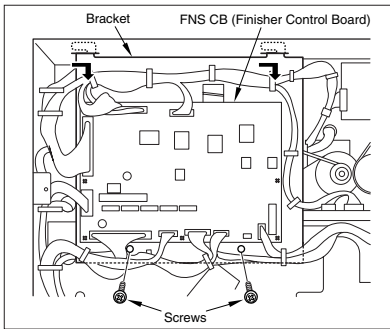
- Phillips-head screwdriver
- Scale

2. Preparation

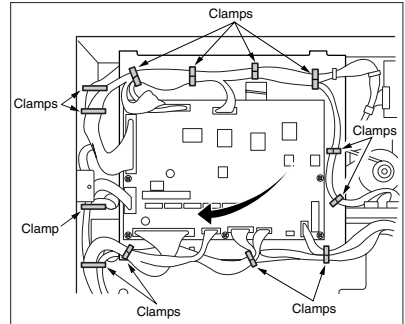
- (1) Remove the rear cover.
- (2) Open the front cover and the guide plate.



- (3) Remove the 2 set screws holding the FNS CB in place. Remove the FNS CB together with its bracket.



- (4) Remove the wirings from the clamps, and move the FNS CB together with its bracket.

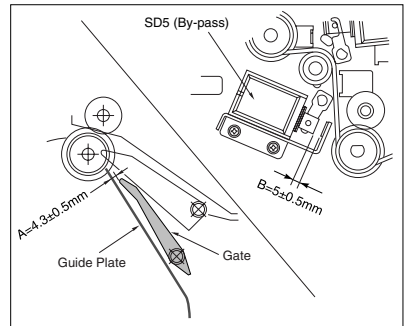


- (5) With SD5 (by-pass) OFF, measure the distance between the by-pass gate and the guide plate, indicated by A in the illustration.

Spec value for distance: $A = 4.3 \pm 0.5 \text{ mm}$

- (6) With SD5 ON, measure the gap between the solenoid plunger and the bracket stopper (indicated by B in the illustration).

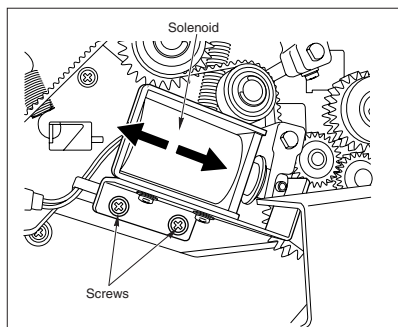
Spec value for gap: $B = 5 \pm 0.5 \text{ mm}$



- (7) If either measurement is out of spec, carry out adjustment as described below.

3. Adjustment Procedure

- (1) Loosen the 2 set screws holding the solenoid in place, and move the solenoid as necessary to adjust.



- (2) Retighten the screws.
- (3) Reassemble in the opposite sequence to removal.

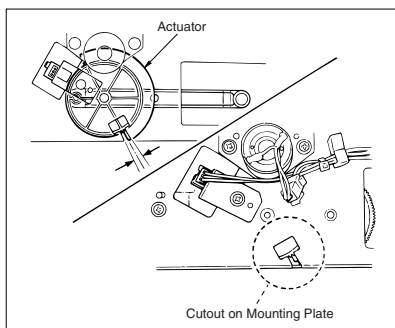
[17] FNS Adjusting the Shift Position

1. Tool used

- Screwdriver (Phillips)

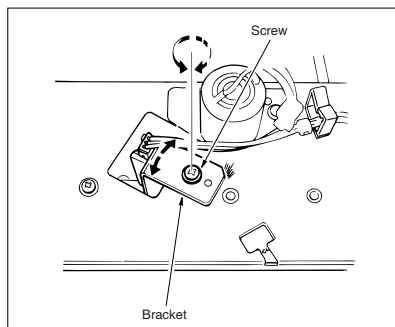
2. Preparation

- (1) Remove the following parts.
 - Rear cover
 - Top cover
 - Cover Inserter A (if installed)
- (2) Switch the power OFF to ON to OFF.
- (3) With the M2 (roller shift) OFF (home position), check that the actuator on PS18 (roller shift HP) is correctly aligned with the cutout on the shift-unit mounting plate.



3. Adjustment Procedure

- (1) Loosen the screw holding the PS18 (roller shift HP) bracket in place, and adjust the bracket position as necessary.



- (2) Retighten the screw.
- (3) Reassemble in the opposite sequence to removal.

- (4) If the actuator is not correctly aligned with the cutout, carry out adjustment as described below.

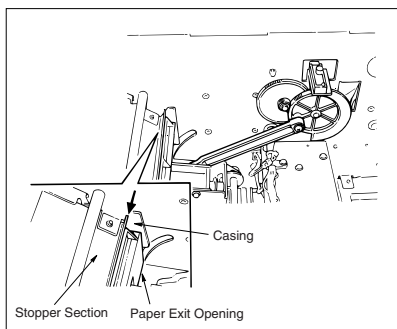
[18] FNS Adjusting Opening/Closing at the Paper Exit

1. Tool used

- Screwdriver (Philips)

2. Preparation

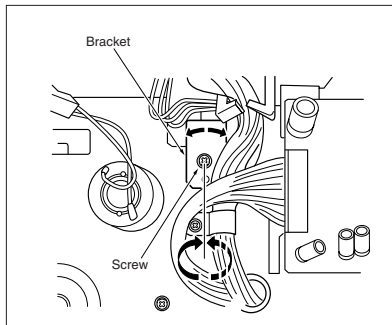
- (1) Remove the following parts.
 - Rear cover
 - Top cover
 - Cover Inserter A (if installed)
- (2) Switch the power OFF → ON → OFF. Then, with the paper exit closed, confirm that the paper exit casing is firmly against the stopper section.



- (3) If the casing is not in firm contact with the stopper, carry out adjustment described as follows.

3. Adjustment Procedure

- (1) Loosen the set screw holding the PS12 (paper exit-opening detector) bracket in place, and adjust the bracket position as necessary.



- (2) Retighten the bracket set screw.
- (3) Reassemble in the opposite sequence to removal.

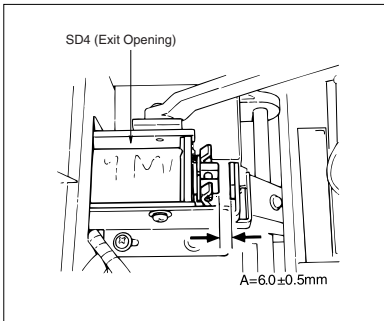
[19] FNS Adjusting the Paper Exit-Opening Solenoid

1. Tools used

- Phillips-head screwdriver
- Scale

2. Preparation

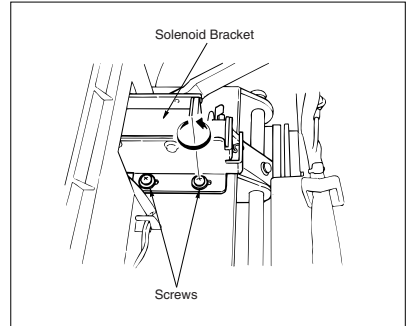
- (1) Remove the following parts.
 - Rear cover
 - Top cover
 - Cover Insert A (if installed)
 - (2) With SD4 (paper exit-opening solenoid) ON, measure the gap between the solenoid plunger and the bracket stopper.
- Spec value for gap: $A = 6.0 \pm 0.5\text{mm}$



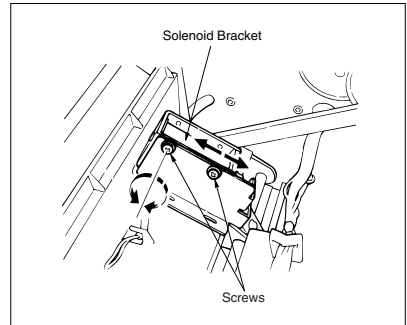
- (3) If the gap is out of spec, carry out adjustment describe as follows.

3. Adjustment Procedure

- (1) Remove the 2 set screws holding the solenoid bracket in place, and remove the solenoid together with the bracket.



- (2) Loosen the 2 screws holding the solenoid to the bracket, and adjust the position of solenoid.



- (3) Retighten the 2 solenoid screws, then replace the solenoid and bracket into their original position and screw in the 2 bracket screws.
- (4) Reassemble in the opposite sequence to removal.

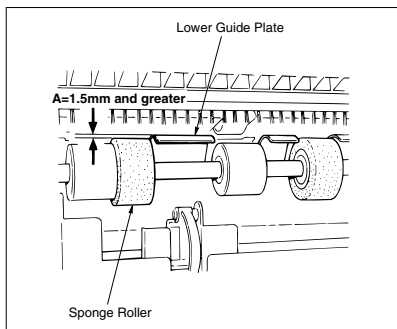
[20] FNS Adjusting the Paper Exit-Opening Lower Guide Plate

1. Tools used

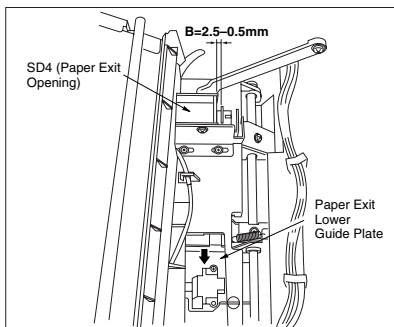
- Screwdriver (Phillips)
- Scale

2. Preparation

- (1) Remove the following parts.
 - Rear cover
 - Top cover
 - Cover Inserter A (if installed)
- (2) With SD4 (paper exit-opening solenoid) OFF, confirm that the paper exit-opening lower guide plate is a sufficient distance (distance A) higher than the sponge rollers.
Spec value: $A = 1.5\text{mm}$ and greater



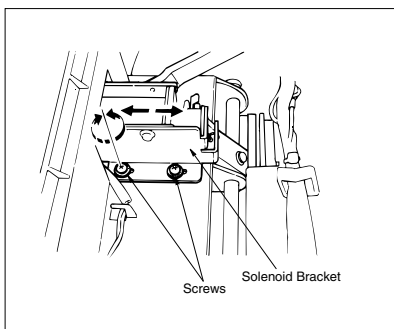
- (3) Hold down the paper exit-opening lower guide plate with your hand so that the paper exit roller makes contact, and check that the remaining stroke for solenoid SD4 (distance B) is within spec.
Spec value: $B = 2.5 \pm 0.5\text{mm}$



- (4) If either measurement is out of spec, carry out adjustment as described below.

3. Adjustment Procedure

- (1) Loosen the 2 set screws holding the solenoid bracket in place, and adjust the position of the bracket so that distances A and B are within spec.



- (2) Retighten the 2 bracket set screws.
- (3) Reassemble in the reverse sequence to removal.

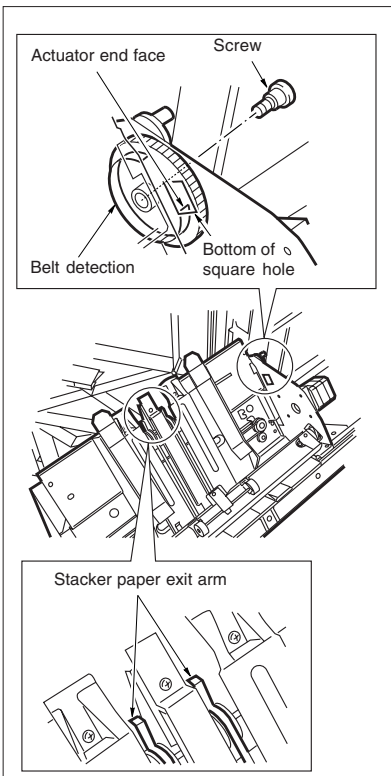
[21] FNS Adjusting the Mount Location of the Paper Exit Arm

1. Tools used

- Screwdriver (Phillips)

2. Adjustment Procedure

- (1) Remove the screw to remove the belt detection gear.
- (2) When the stacker paper exit arm is at the position shown below, secure the belt detection gear with a screw with the actuator end face of the belt detection gear aligned with the bottom of the square hole.



[22] FNS Adjusting the Mount Location of the Upper Alignment Plates

1. Tools used

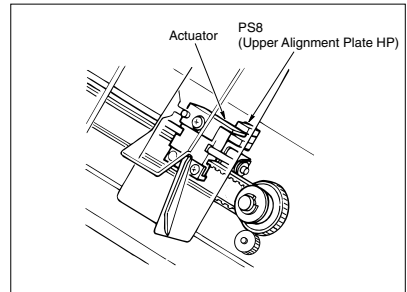
- Screwdriver (Phillips)
- Scale

2. Preparation

- (1) Open the front cover and pull out the stacker/stapler unit.

3. Adjustment Procedure

- (1) Move the upper alignment plates into home position. (Move so that the actuator on the upper-alignment-plate drive belt is at PS8 (upper-alignment-plate HP).

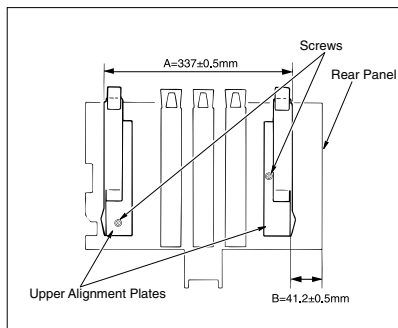


OTHER ADJUSTMENT

- (2) Loosen the 2 set screws fixing the upper alignment plates in place (one screw on each plate), and adjust the plates so that distances A and B are within specification.

Spec values: $A = 337 \pm 0.5 \text{ mm}$

$B = 41.2 \pm 0.5 \text{ mm}$



- (3) Retighten the screws.

[23] FNS Adjusting the Tension of the Upper-Alignment-Plate Drive Timing Belt

1. Tools used

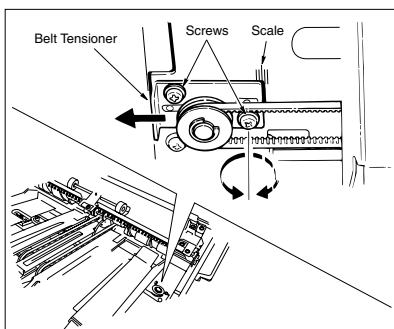
- Screwdriver (Phillips)

2. Preparation

- (1) If the upper-alignment-plate drive belt tensioner has been loosened as a result of belt replacement or for some other reason, adjust as described below.

3. Adjustment Procedure

- (1) Loosen the 2 set screws (see illustration).
 (2) Move the belt tensioner so that the end is aligned with the center mark on the scale, and retighten the screws.



[24] FNS Adjusting the Mount Location of the Lower Alignment Plates (FN-4 only)

1. Tool used

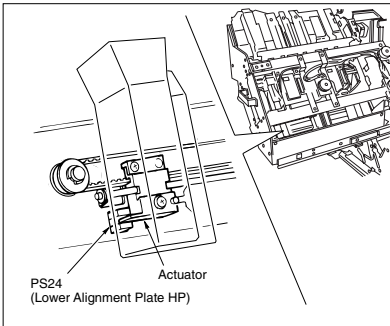
- Phillips-head screwdriver

2. Preparation

- (1) Open the front cover and pull out the stacker/stapler unit.

3. Adjustment Procedure

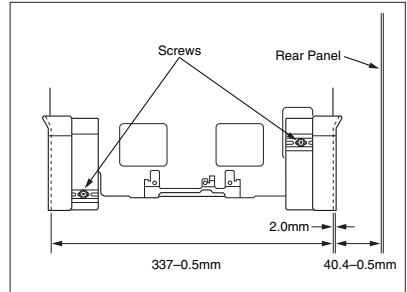
- (1) Move the lower alignment plates into home position. (Move so that the actuator on the lower-alignment-plate drive belt is at PS24 (lower-alignment-plate HP).



- (2) Loosen the 2 set screws fixing the lower alignment plates in place (one screw on each plate), and adjust the plates so that distances A and B are within specification.

Spec values: $A = 337 \pm 0.5 \text{ mm}$

$B = 40.4 \pm 0.5 \text{ mm}$



- (3) Retighten the screws.

[25] FNS Adjusting the Tension of the Lower-Alignment-Plate Drive Timing Belt (FN-4 only)

1. Tool used

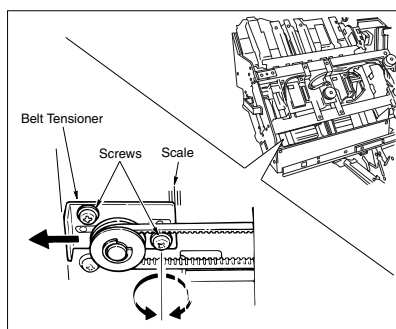
- Screwdriver (Phillips)

2. Preparation

- (1) If the lower-alignment-plate drive belt tensioner has been loosened as a result of belt replacement or for some other reason, adjust as described below.

3. Adjustment Procedure

- (1) Loosen the 2 set screws (see illustration).
- (2) Move the belt tensioner so that the end is aligned with the center mark on the scale, and retighten the screws.



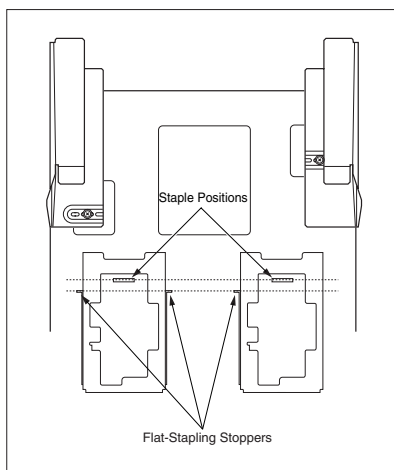
[26] FNS Adjusting the Stapling Position (Flat Stapling)

1. Tools used

- Screwdriver (Phillips)
- Scale

2. Preparation

- (1) Check whether the virtual line running between the stoppers is parallel to the virtual line between the staplers.

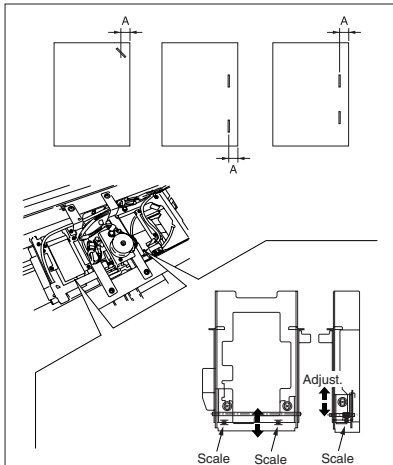


- (2) If the lines are not parallel or if you need to change the stapling position, carry out adjustment as described below.

3. Adjustment Procedure

- (1) Loosen the 3 set screws holding the flat-stapling stopper bracket in place, and position the bracket so that distance A is within the specification range.

Spec range: A = 5.5 to 11.5mm
(initial value = 8.5mm)



- (2) Hold paper against the stoppers and confirm that all three stoppers are in alignment.
- (3) Execute stapling to confirm that the stopper line and stapler line are parallel.

[27] FNS Adjusting the Stapler Vertical Positioning

1. Tools used

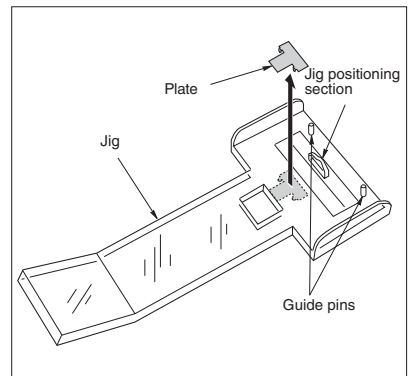
- Phillips-head screwdriver
- Jig

2. Preparation

- (1) When replacing or reinstalling a stapler or clincher, adjust the vertical alignment as described below.

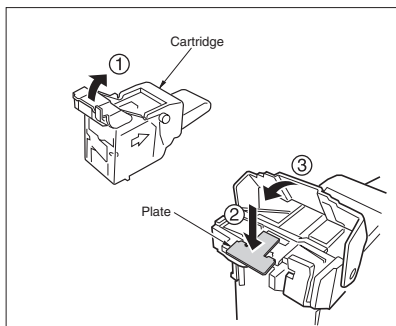
3. Adjustment Procedure

- (1) If installing a stapler, mount the stapler into place.
- (2) Loosely fasten the clincher in place with 4 screws. (If the clincher is already fastened in place, loosen the 4 screws so that you can adjust it.)
- (3) Remove the plate from the jig.



OTHER ADJUSTMENT

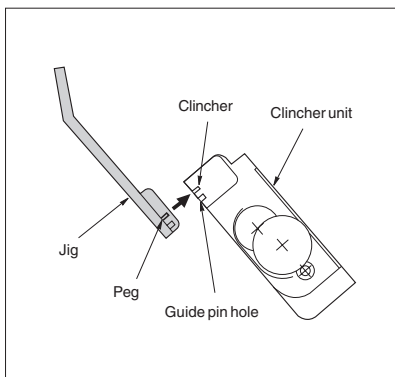
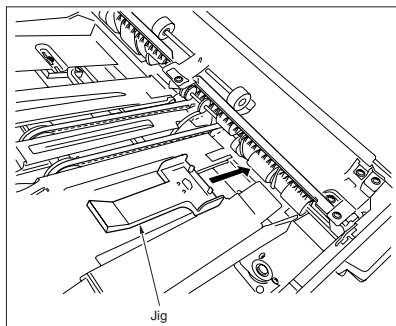
- (4) Remove the cartridge, and install the plate that you took from the jig.



- (5) Install the cartridge.

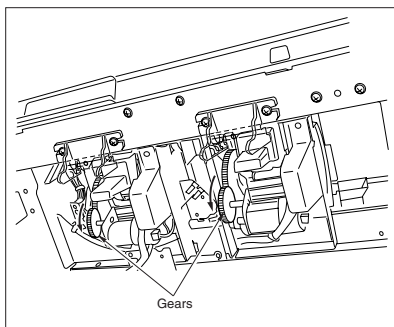
Caution: Remove the remaining staples on the upper surface. Remove the staple sheet if it is bent.

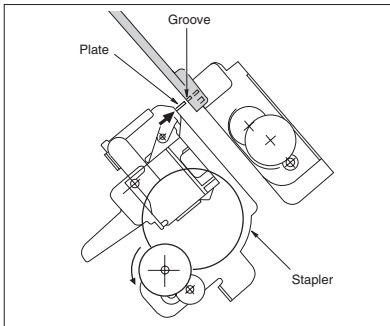
- (6) Insert the two guide pins of the jig in the guide pin holes, and engage the end of the positioning portion of the jig with the clincher.



Caution: The positioning portion of the jig need not be engaged with the clincher completely. Only part of the end of the positioning portion must be engaged so long as it is not disengaged.

- (7) Rotate the stapler gears downward. Adjust the clincher position so that the plate on the cartridge fits smoothly into the groove on the jig. Rotate the stapler gear further to fit the plate in the groove in the jig and the jig in the clincher unit completely.





- (8) Tighten the 4 clincher screws to fasten the clincher into place.
- (9) Rotate the stapler gears back upwards, and remove the jig.

Caution: When removing the jig, be careful not to break the miler of the clincher unit.

- (10) Remove the plate from the cartridge and set it back into the jig.
- (11) Reinstall the cartridge and check that stapler operates correctly.

[28] FNS Adjusting the Angle of the Folding Stopper (FN-4 only)

1. Tool used

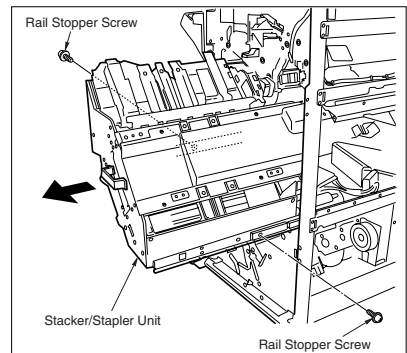
- Screwdriver (Phillips)

2. Preparation

- (1) If the staple orientation is not parallel with the paper edge, adjust as described below.

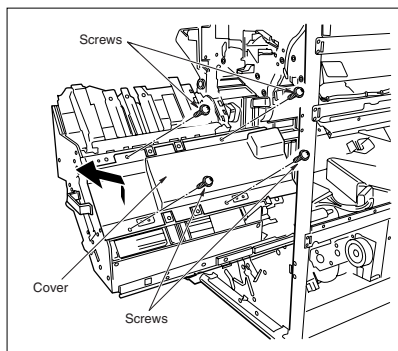
3. Adjustment Procedure

- (1) Open the front cover and pull the stacker/stapler unit part of the way out.
- (2) Remove the 2 rail-stopper screws. Then pull the stacker/stapler unit all of the way out.

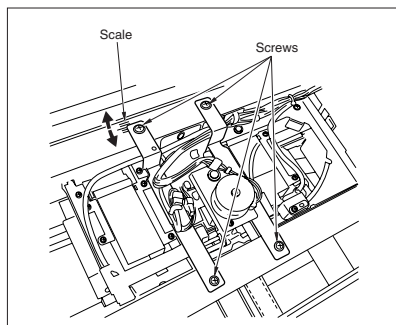


OTHER ADJUSTMENT

- (3) Remove the 4 set screws holding the cover in place, and remove the cover.



- (4) Loosen 4 more set screws.
(5) Rotate the stapling-and-folding stopper assembly as necessary to adjust the alignment.



- (6) Retighten the screws.

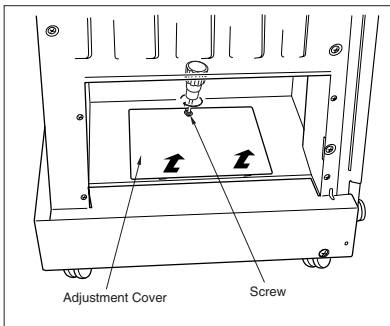
[29] FNS Adjusting the Angle of the Folding Stopper (FN-4 only)

1. Tools used

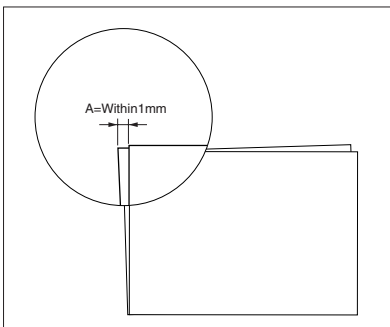
- Phillips-head screwdriver
- Phillips-head stubby screwdriver

2. Preparation

- (1) Connect the finisher to the main body.
- (2) Load A3 or 11x17 paper into the main body.
- (3) Remove the paper exit-guide-plate adjustment cover.

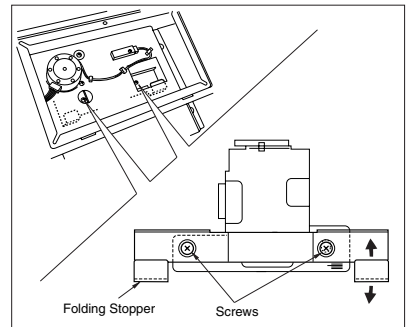


- (4) Check whether the following conditions hold.
 - Check that the fold line (the folding stopper) is perpendicular to the conveyance direction.
 - Check that the fold side discrepancy (for A3 or 11x17 paper) is within the limit.
Limit: A = 1mm



3. Adjustment Procedure

- (1) Take a fold sample using A3 or 11x17 paper.
- (2) Check the discrepancy along the folded set's trailing edge, and use this information to judge the direction and amount by which the stopper angle must be corrected.
- (3) Loosen the 2 front set screws holding the stopper in place, and adjust the stopper angle by rotating around the rear screw.



- (4) Retighten the 2 front screws.
- (5) Take another sample and check the discrepancy.
- (6) Repeat steps (3) and (4) until the discrepancy is within the specified limit.
- (7) Replace the adjustment cover.

- (5) If either or both of the above conditions does not hold, adjust as described below.

[30] FNS Adjusting the Tension of the Stapler- Movement Timing Belt

1. Tools used

- Screwdriver (Phillips)
- Tension gauge or spring balance

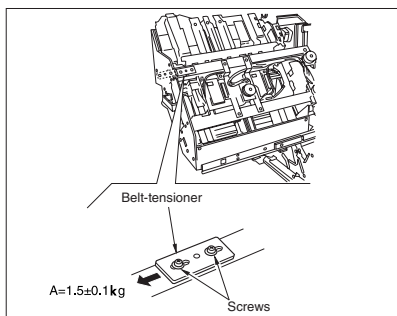
2. Preparation

- (1) If the belt tensioner has become loose as a result of belt replacement or for some other reason, adjust as described below.

3. Adjustment Procedure

- (1) Loosen the 2 screws holding the belt-tensioner in place.
- (2) Using a tension gauge or spring balance, pull the belt-tensioner so that tension A is at the value indicated below. Maintain this tension while re-tightening the screws.

Spec value for tension: $A = 1.5 \pm 0.5 \text{ kg}$



[31] FNS Adjusting the Tension of the Stapler-Rotation Timing Belt

1. Tools used

- Screwdriver (Phillips)
- Tension gauge or spring balance

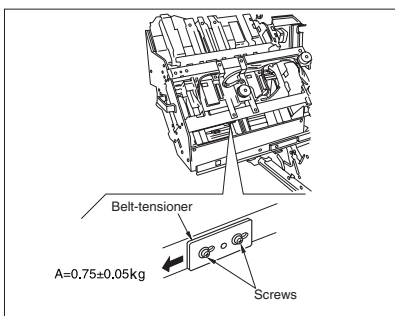
2. Preparation

- (1) If the belt tensioner has been loosened as a result of belt replacement or for some other reason, adjust as described below.

3. Adjustment Procedure

- (1) Loosen the 2 screws holding the belt-tensioner in place.
- (2) Using a tension gauge or spring balance, pull the belt-tensioner so that tension A is at the value indicated below. Maintain this tension while re-tightening the screws.

Spec value for tension: $A = 0.75 \pm 0.05 \text{ kg}$



[32] FNS Adjusting the Folding Force (FN-4 only)

1. Preparation

- (1) If necessary, you can change the force of the folding and pressure rollers as described below.

Caution: If changing the forces, be sure to make the same change for all rollers at the same time.

2. Adjustment Procedure

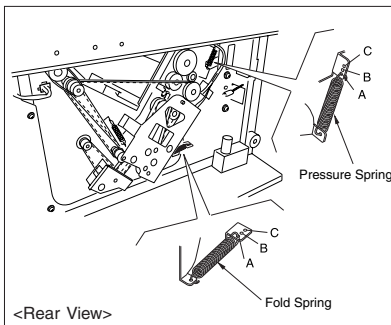
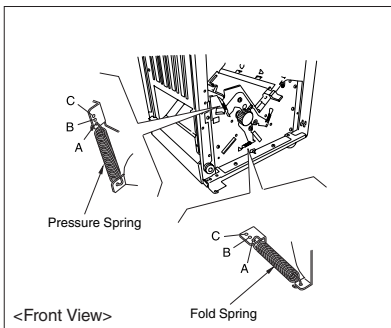
- (1) Set the springs as illustrated below; a pressure spring on the folding roller, and a fold spring on the pressure roller.

Force: A = 7.8kgf

B = 8.9kgf

C = 10.0kgf

Caution: Be sure to attach the springs into like-labeled holes (either A, or B, or C).



[33] FNS Adjusting the Mount Location of the Folding Knife Motor (FN-4 only)

1. Tools used

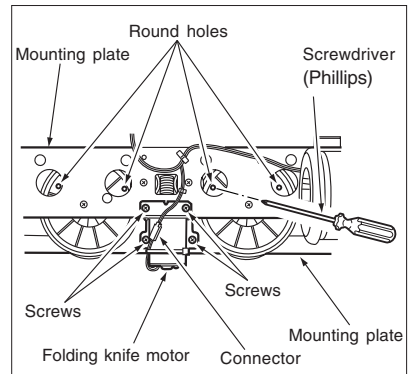
- Screwdriver (Phillips)

2. Preparation

Remove the finisher from the main body.

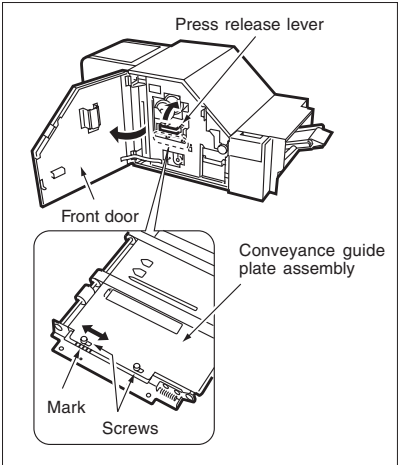
3. Adjustment Procedure

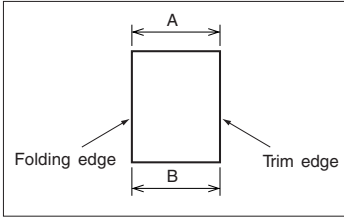
- (1) Disconnect the connector and remove the folding knife motor from the mounting plate. (4 screws)
- (2) Align the round holes (four) in the left and right knife drive cams to the holes in the mounting plate, then insert the screwdriver or shaft.
- (3) Install the folding knife motor on the mounting plate (with four screws) and connect the connector.
- (4) Remove the screwdriver or shaft used to secure the left and right knife drive cams.



[34] TU Trimming Parallelism Adjustment

1. Tools
- Screwdriver (Phillips)
2. Adjustment Method



| Step | Operation |
|------|--|
| 1 | Measure the lengths of the upper edge (A) and lower edge (B) of the trimmed booklet to obtain the parallelism. Parallelism = A - B <div></div> |
| 2 | Open the front door. |
| 3 | Raise the press release lever. |
| 4 | Loosen the two screws. |
| 5 | Adjust the conveyance guide plate assembly according to the mark so that the parallelism is within the spec. Standard: less than ±1 mm |
| 6 | Tighten the two screws securely. |

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ISW

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What is ISW ?

ISW (In-System Writer) is a process of updating the control programs stored in flash ROM mounted on various control boards in a Minolta digital copier without isolating the boards from the copier. Running ISW enables you to upgrade control programs without replacing the boards and maintain the boards during their replacement.

Tools available for running ISW include ISW Trns (PC software), which connects a personal computer (PC) to the digital copier.

This tool can be plugged into the ISW connector of the digital copier to directly update the control programs in flash ROM assembled in the unit.

This chapter focuses on instructions on setting up the Di750 to run ISW. For how to run ISW Trns refer to Minolta ISW (In-System Writer) Service Manual.

SETUP

[1] ISW-compatible boards

The Di750 allows ROM data residing on the following boards to be updated via ISW Tool:

- Graphics control board
- Printer control board
- Operation control board
- ADF control board

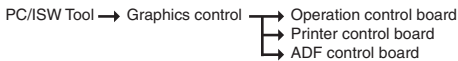
The ROMs of other boards than the above need to be replaced.

2. 25 mode

The 25 mode works only where the copier has both the graphics control and operation control programs installed.

(Some parts of HELP+CHECK mode are used to update the operation control program in 25 mode.)

[2] Data flow



Important Note:

The availability of the Graphics control board is prerequisite to updating ROM data on other boards.

[3] Ready up the copier to start an ISW transfer

1. Transfer modes

The copier supports three transfer modes as described below.

- Power-on mode

If the copier does not have the image control program installed, its writing to the copier is enabled when the main switch is turned on. Because the image control board controls the power supply to the operation board, nothing will appear on the operation LCD and timer LED will blink even though the operation control program has been installed on the copier.

- HELP + CHECK mode

Turning ON the copier with HELP and CHECK puts it into the HELP + CHECK mode. If the copier has the graphics control program installed, but not the operation control program, the 25 mode would not launch. This mode is specifically maintained to enable ISW in this situation.

2. Instances of ISW transfer

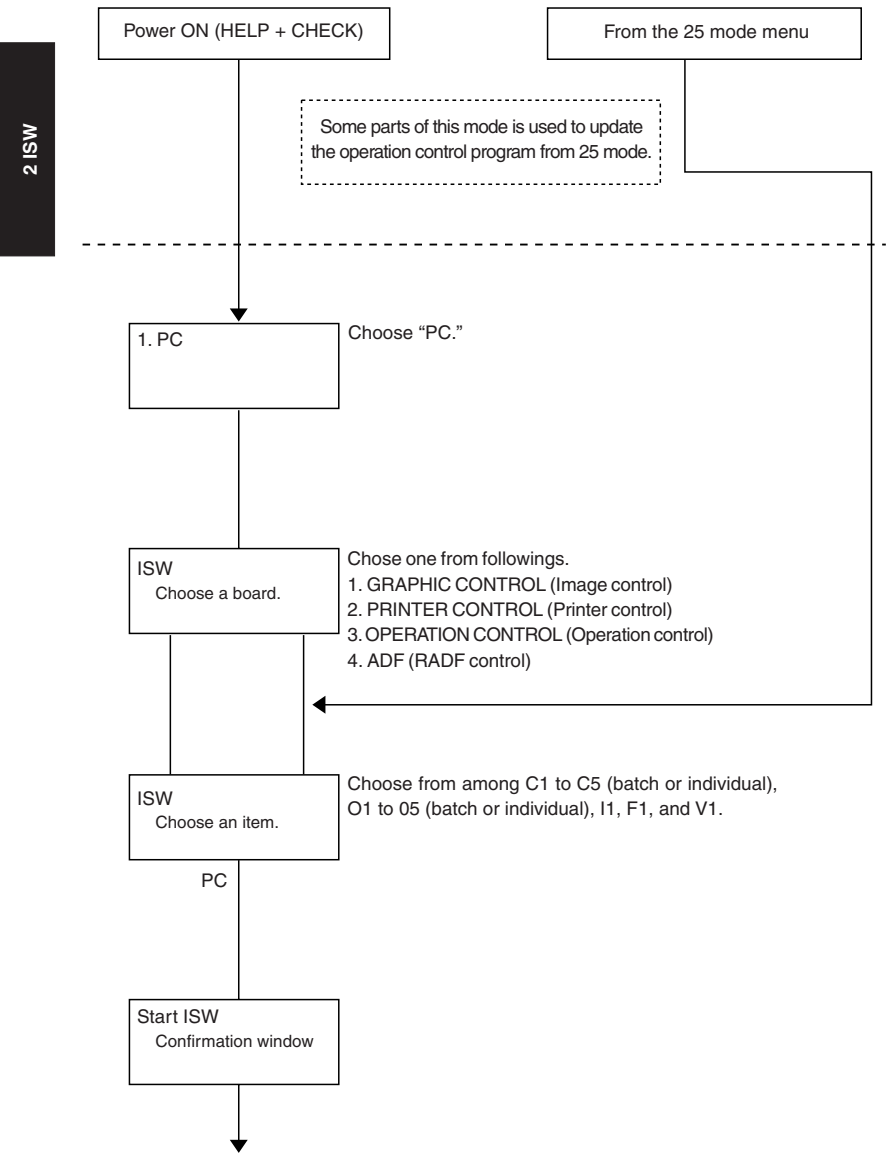
- Writing ROM data newly (as after replacing boards)

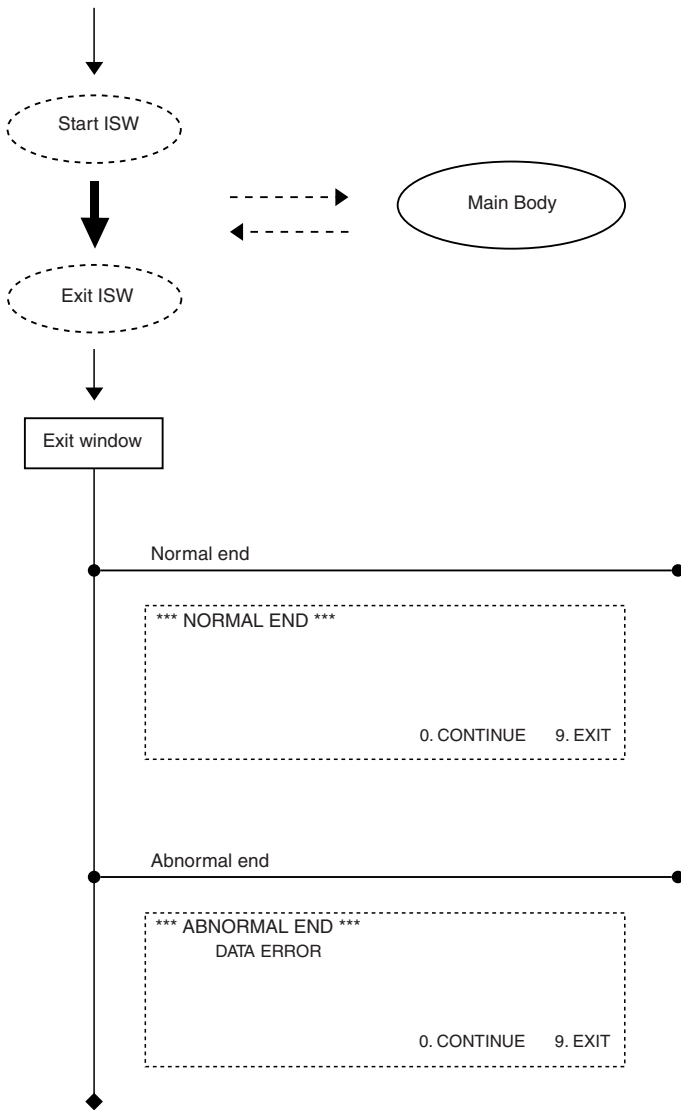
| | Normal startup display | Writing method | Condition |
|-------------------|---|--|--|
| Graphics control | Flashing timer LED No display on the operation LCD | Writing is enabled with power turned ON. | The copier does not have the graphics control program installed. |
| Operation control | Error code display | Writing is enabled by launching the HELP + CHECK mode. | The copier has the graphics control program installed. |
| Others | Error code display | 25 mode or HELP + CHECK mode | The copier has both the graphics control and operation control programs installed. |

- Upgrading

| | Normal startup display | Writing method | Condition |
|-------------------|------------------------|------------------------------|--|
| Graphics control | Normal | 25 mode or HELP + CHECK mode | The copier has all the programs installed. |
| Operation control | Normal | | |
| Others | Normal | | |

[4] HELP + CHECK mode operation flow





[5] Operating procedure

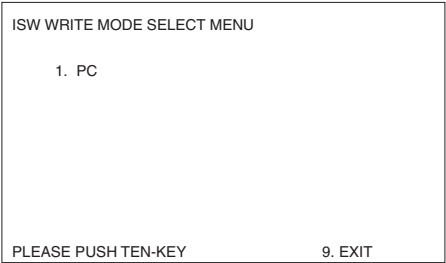
1. **HELP + CHECK + power supply mode**

(prerequisite)

Turn the main SW ON while pressing “HELP” and “CHECK” button.

(1) ISW write mode select menu

Function: This window lets you select a mode in which to update ISW.

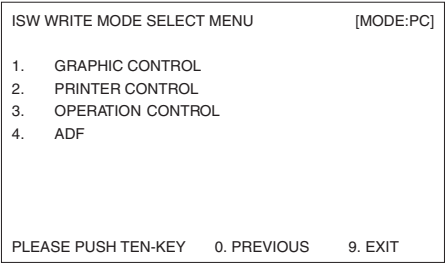


Operating instructions

- 1) Choose ISW WRITE MODE
Choose “PC” for both using personal computer.
- 2) To exit writing
Press 9 (EXIT) to open the power-off window.

(2) ISW device select menu

Function: This window lets you select the control board on which to update ROM data. You can choose from among graphics control, printer control, operation control, ADF.



Operating instructions

- 1) Select the control board on which to update ROM data. Choose from among 1 to 5. When you select a number, the associated item select menu appears.
- 2) To return to the previous window
Press 0 (PREVIOUS) to return to the ISW write mode select menu.
- 3) To exit writing
Press 9 (EXIT) to open the power-off window.

(3) Item select menu

Function: This window lets you select write items.

| | |
|--|-----|
| OPERATION CONTROL - ITEM SELECT MENU [MODE:PC] | |
| 1. | 01 |
| 2. | 02 |
| 3. | 03 |
| 4. | 04 |
| 5. | 05 |
| 6. | ALL |
| PLEASE PUSH TEN-KEY 0. PREVIOUS 9. EXIT | |

Operating instructions

1) Individual write

Choose from among 1 to 5. When you select a number, the start confirmation window opens.

2) Batch write

To write all items in a batch, select "ALL." When you select "ALL," the start confirmation window opens.

3) To return to the previous window

Press 0 (PREVIOUS) to return to the ISW device select menu.

4) To exit writing

Press 9 (EXIT) to open the power-off window.

(4) Start confirmation window

Function: This window prompts you to confirm whether to start running ISW or not.

| | |
|--|-----------|
| OPERATION CONTROL - 01 | [MODE:PC] |
| ISW START OK? | |
| PLEASE PUSH TEN-KEY 1. YES 2. NO | |

Operating instructions

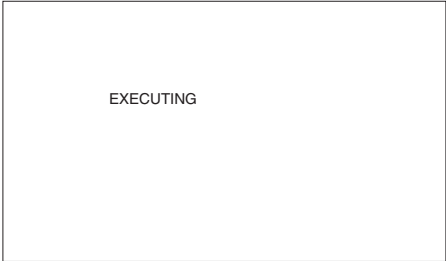
1) Choose YES to start running ISW.

2) Choose NO to cancel.

When you cancel, the item select menu appears again.

(5) Executing window

Function: This window displays the status of execution in progress.



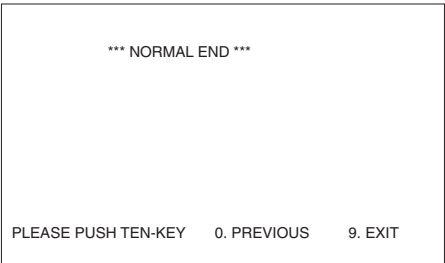
Operating instructions

- 1) The executing indicator flashes. When the execution ends, the ending result window opens.

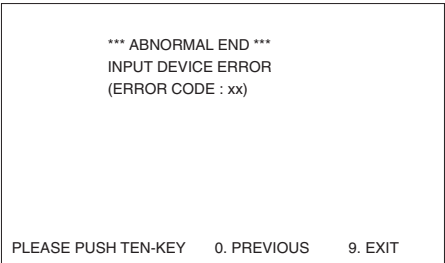
(6) Ending result window

Function: This window displays the status of ISW ending.

Normal end



Abnormal end



Operating instructions

- 1) Choose 0 (CONTINUE) to return to the item select menu.
- 2) To exit writing
Press 9 (EXIT) to open the power-off window.

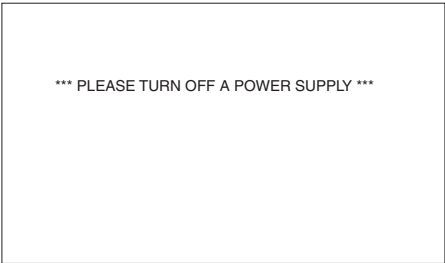
| Error Code | Description | Action No. |
|------------|---|------------|
| 01 | There is an error in the command to ISW processing unit. | (1) |
| 1F | A program error is detected. | (1) |
| 41 | Input data format error. (during ISW to operation control board) | (2) |
| 42 | Invalid machine name input data. (during ISW to operation control board) | (2) |
| 43 | Invalid board name input data. (during ISW to operation control board) | (2) |
| 81 | Input device error such as input timeout. (during ISW to operation control board) | (3) |
| C1 | Failed to erase flash ROM. (during ISW to graphics control board) | (5) |
| C2 | Write to flash ROM has failed. (during ISW to graphics control board) | (5) |
| C3 | ROM checksum error. (during ISW to graphics control board) | (8) |
| C4 | Output device error such as output timeout. | (6) |
| E9 | Communication parameter error at image control unit to operation unit I/F. (during ISW to operation control board) | (4) |
| EA | Command sequence error at image control unit to operation unit I/F. (during ISW to operation control board) | (4) |
| EB | Communication timeout error at image control unit to operation unit I/F. (during ISW to operation control board) | (4) |
| F0 | Flash ROM error (during ISW to operation control board) | (7) |
| F1 | Flash verify error (during ISW to operation control board) | (7) |
| F2 | Flash write error (during ISW to operation control board) | (7) |
| F3 | Flash erase error (during ISW to operation control board) | (7) |
| F8 | Receive checksum error at image control unit to operation unit I/F (during ISW to operation control board) | (4) |
| F9 | Receive header code error at image control unit to operation unit I/F (during ISW to operation control board) | (4) |
| FA | Receive parity error at image control unit to operation unit I/F (during ISW to operation control board) | (4) |
| FB | Receive framing error at image control unit to operation unit I/F (during ISW to operation control board) | (4) |
| FC | Receive overflow error at image control unit to operation unit I/F (during ISW to operation control board) | (4) |

<Error code table action classification>

- (1) Program is not executing normally.
Restart from power up and re-execute the program.
- (2) Check the ISW transfer data file.
- (3) Check that the communication cable between input devices (PC) is properly connected.
- (4) Check the image control unit to operation unit I/F.
- (5) There is an error in the flash ROM on the image control board.
Restart from ISW. If the error persists, the life of the image control board flash ROM may have expired.
Replace the image control board.
- (6) An error was detected in the ISW target board. Check the ISW target board.

- (7) There is an error in the flash ROM on the operation unit board.
Restart from ISW. If the error persists, the life of the operation unit board flash ROM may have expired.
Replace the operation unit board.
* The system may fail to restart.
In that case, restart while pressing the HELP key and CHECK key and repeat ISW.
- (8) The checksum result after program write does not match the ROM checksum data of the ISW transfer data file.
Restart from ISW. If the error persists, the ISW transfer data file may not be created correctly.

- (7) Power-off window
Function: This is a power-off window.



Operating instructions
1) Turn OFF the main switch.

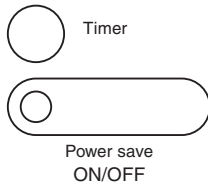
[6] **Preparing the copier to transfer**

Start the copier with 25 mode enabled to put the copier into ISW transfer wait state.

| Step | Procedure |
|------|---|
| 1 | Turn OFF the copier main switch. |
| 2 | Turn ON the copier main switch while holding down the copy count setup buttons 2 and 5, to enable 25 mode. |
| 3 | [25 mode menu window] Press F1 (ISW update). |
| 4 | [ISW update menu window] Select the control board on which to update ROM date. |
| 5 | [ISW update start window] The START key appears, indicating the copiers' readiness to launch an ISW transfer. |
| 6 | Follow operating instructions in ISW (in-System Writer) Service Manual. |

[7] Relationships between processing states and operational LEDs

Note : This is only when installing the program to graphics control for the first time.



| No. | | Timer | Power Save |
|-----|---|----------|------------|
| 1 | Initializing CPU now | OFF | OFF |
| 2 | Checking memory | OFF | OFF |
| 3 | Memory check error (waiting for data from PC) | Flashing | OFF |
| 4 | ISW processing (receiving data) | OFF | Flashing |
| 5 | ISW processing (writing to flash memory) | OFF | Flashing |
| 6 | Transfer data error | Flashing | Flashing |
| 7 | Flash write error | Flashing | Steady lit |
| 8 | Memory check successful and reboot | OFF | OFF |

[8] Rewriting procedure after an error interruption

If errors occur while writing ROM data, it is written the same way as explained in "Writing ROM data newly" in [3]-2, "Instances of ISW transfer."

- Graphics control program

The timer LED (orange) flashes. (Nothing will appear on the operation LCD because communication with the operating unit is disabled.)

Retry ISW after turning the main switch OFF, then ON.

- Operation control program

Since the 25 mode is disabled, launch the HELP + CHECK mode to run ISW.

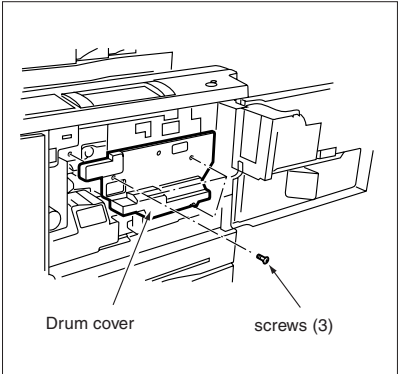
- Other control programs

Relaunch the 25 mode to retry ISW. (It is assumed that the copier has both the graphics control and operation control programs successfully installed.)

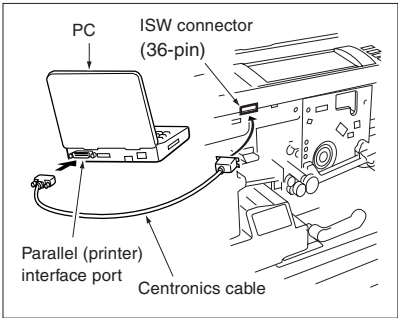
[9] Making the ISW connector and the power connector available

The ISW connector and the power connector are hidden under the drum frame cover. Detach this cover to run ISW.

- a. Procedure
- (1) Open the left and right front doors.
 - (2) Open the toner supply unit.
 - (3) Loosen three clamping screws to detach the drum frame cover.



- (4) Connect the PC parallel port and the copier ISW connector with parallel interface cable as instructed in ISW (In-System Writer) Service Manual.



[10] Kinds and quantities of update ROMs

The update EPROMs supported by this unit are listed below.
However, the number of update EPROMs supported may change in the future.

| Control board | ROM quantity |
|-----------------------|--------------|
| General control board | 1 |
| Operating unit | 7 |
| Imaging control board | 2 |
| ADF control board | 1 |




SERVICE

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Main Precautions for Maintenance

1. Points to be confirmed before maintenance
Before starting maintenance, ask a user and collect information about troubles occurred on the machine before the maintenance and the conditions of the machine to grasp key points for the maintenance.
2. Copy sample
Be sure to make copy samples at the start and the end of maintenance for checking images.
3. Drum
 - 1) Never expose the drum to the sunlight. Be also careful not to expose a drum to indoor light as far as possible.
When a drum unit or a drum is out of the machine, never fail to cover it with a drum cover.
 - 2) When replacing a drum or a cleaning blade, refer to Item of mounting/dismounting of a cleaning blade for doing a replacement work.
4. When replacing the drum and developer, must perform necessary adjustment by referring to the Di750 List of Adjustment Items.
5. After having completed maintenance work, must reset the PM counter (using the 25 mode).
6. When replacing the fixing unit cleaning web, must reset the fixing unit cleaning web counter (using the 36 mode).
7. When replacing a toner cartridge, wait until the toner supply LED on the operation panel flashes before the replacement.

 **caution:** Turn the main switch off and pull out the power plug without fail before the work of maintenance.

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SERVICE SCHEDULE

[1] Service Schedule

| | Service item | Numbe of copies | Guarantee period (5 years or 30,000,000 copies) | | | | | | | | | | | | | | | | | | | | | | | | | | Service count |
|---------------------------|----------------------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------|---------------|
| | | | x 10,000 copies | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mainbody | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 500,000 copies | | ● | | ● | | ● | | ● | | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 59 times | |
| | Periodic check (II) | Every 1,000,000 copies | | | | ● | | | | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29 times | |
| | Periodic check (III) | Every 3,000,000 copies | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9 times | |
| | Periodic check (IV) | Every 4,500,000 copies | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 6 times | |
| | Periodic check (V) | Every 6,000,000 copies | | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 4 times | |
| | Periodic check (VI) | Every 10,000,000 copies | | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 2 times | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RADF EDH-2 | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 1,000,000 copies | | | | ● | | | | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29 times | |
| | Periodic check (II) | Every 2,500,000 copies | | | | | | | | | | | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 11 times | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FNS FN-104 | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 1,000,000 copies | | | | ● | | | | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29 times | |
| | Periodic check (II) | Every 6,000,000 copies | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 4 times | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FNS FN-4 | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 1,000,000 copies | | | | ● | | | | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29 times | |
| | Periodic check (II) | Every 6,000,000 copies | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 4 times | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCT C-305/ 305L | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 500,000 copies | | ● | | ● | | ● | | ● | | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 59 times | |
| | Periodic check (II) | Every 3,000,000 copies | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 9 times | |
| | Periodic check (III) | Every 10,000,000 copies | | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 2 times | |
| PI Cover Inserter A | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 500,000 copies | | ● | | ● | | ● | | ● | | ● | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 59 times | |
| | Periodic check (II) | Every 1,000,000 copies | | | | ● | | | | ● | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 29 times | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TU TMG-1 | Maintenance | Every 250,000 copies | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 119 times | |
| | Periodic check (I) | Every 10,000,000 copies | | | | | | | | | | | | | | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | 2 times | |

[2] Maintenance Items
1. Main body (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|---------------------------------|--|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|
| | | | | Clea- ning | Inspe- ction | Lubric- ation | Replace- ment | Supply |
| 1 | Preparation | (1) Image check | | | ● | | | |
| 2 | Fixing unit | (1) Fixing separation claws (upper and lower) cleaning | | ● | | | | |
| 3 | Drum carriage | (1) Charging corona unit, cleaner, and developing unit, sensor support stay assembly, drum removal | | | | | | |
| | | (2) Drum carriage inside cleaning (including drum fixing coupling surface) | | ● | | | | |
| 4 | Cleaner | (1) Cleaner unit cleaning | | ● | | | | |
| | | (2) Installation on drum carriage | | | | | | |
| 5 | Charging corona unit | (1) Charging corona unit/PCL cleaning | | ● | | | | |
| | | (2) Charging wire 4014-3010-01 | 2 | | | | | |
| | | (3) Charging wire unit vibration proof rubber 4014-3003-01 | 2 | | | | ● ● | |
| | | (4) Installation on drum carriage | | | | | | |
| 6 | Developing unit | (1) Developing unit cleaning | | ● | | | | |
| | | (2) Installation on drum carriage | | | | | | |
| 7 | Transfer/separation corona unit | (1) Transfer/separation corona unit cleaning | | ● | | | | |
| 8 | Registration | (1) Paper dust removing brush/ registration roller/others cleaning | | ● | | | | |
| | | (2) Registration sensor cleaning | | ● | | | | |
| | | (3) Mis-centering detection sensor cleaning | | ● | | | | |
| | | (4) Second paper feed sensor cleaning | | ● | | | | |

Note: The Part Number supported may change in the future.

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|----------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|
| | | | | Clea-ning | Inspe-ction | Lubric-ation | Replace-ment | Supply |
| 9 | ADU | (1) Horizontal conveyance roller/ others cleaning | | ● | | | | |
| | | (2) Paper reverse/exit entrance guide plate cleaning | | ● | | | | |
| | | (3) Paper reverse/exit detection sensor cleaning | | ● | | | | |
| | | (4) ADU deceleration detection sensor cleaning | | ● | | | | |
| | | (5) ADU paper pre-registration detection sensor cleaning | | ● | | | | |
| 10 | Tray | (1) Paper dust removing brush (500-sheet tray) | | ● | | | | |
| | | (2) Paper dust removing brush (1000-sheet tray) | | ● | | | | |
| | | (3) Paper feed detection sensor cleaning | | ● | | | | |
| | | (4) Paper pre-registration detection sensor cleaning | | ● | | | | |
| 11 | By-pass tray | (1) Trailing edge size detection sensor cleaning | | ● | | | | |
| 12 | Read | (1) Platen glass cleaning | | ● | | | | |
| | | (2) Slit glass cleaning | | ● | | | | |
| 13 | Main body | (1) Exterior and interior cleaning | | ● | | | | |
| 14 | Toner supply | (1) Cartridge insertion opening cleaning | | ● | | | | |
| 15 | Final check | (1) W.U.T check | | | ● | | | |
| | | (2) Image and paper feeding check (including vertical magnification adjustment and timing adjustment) | | | ● | | | |
| | | (3) PM counter resetting | | | ● | | | |

2. RADF [EDH-2] (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|
| | | | | Clea-ning | Inspe-ction | Lubric-ation | Replac-ement | Supply |
| 1 | Preparation | (1) Paper feeding check | | | ● | | | |
| | | (2) Exterior | | | ● | | | |
| 2 | Paper feed section | (1) Size detection sensor 1 | | ● | | | | |
| | | (2) Size detection sensor 2 | | ● | | | | |
| | | (3) Size detection sensor 3 | | ● | | | | |
| | | (4) Registration sensor | | ● | | | | |
| | | (5) Registration mirror | | ● | | | | |
| | | (6) Paper feed roller | | ● | | | | |
| | | (7) Separation roller | | ● | | | | |
| | | (8) Double feed prevention roller | | ● | | | | |
| | | (9) Separation assist roller | | ● | | | | |
| | | (10) Double feed prevention roller rubber | | ● | | | | |
| | | (11) Cleaning pad | | | | | | |
| | | (12) Registration roller | | ● | | | | |
| 3 | Conveyance section | (1) Read sensor | | ● | | | | |
| | | (2) Read sensor mirror | | ● | | | | |
| | | (3) Skew sensor (F) | | ● | | | | |
| | | (4) Skew sensor (F) mirror | | ● | | | | |
| | | (5) Skew sensor (R) | | ● | | | | |
| | | (6) Skew sensor (R) mirror | | ● | | | | |
| | | (7) Read roller | | ● | | | | |
| | | (8) Paper exit roller 1 | | ● | | | | |
| 4 | Paper exit section | (1) Reversal sensor/left sensor | | ● | | | | |
| | | (2) Reversal sensor/left sensor mirror | | ● | | | | |
| | | (3) Reversal sensor/middle sensor | | ● | | | | |
| | | (4) Reversal sensor/middle sensor mirror | | ● | | | | |
| | | (5) Reversal sensor/right sensor | | ● | | | | |
| | | (6) Reversal sensor/right sensor mirror | | ● | | | | |
| | | (7) Reversal roller | | ● | | | | |
| | | (8) Reverse conveyance roller 1 | | ● | | | | |
| | | (9) Reverse conveyance roller 2 | | ● | | | | |
| | | (10) Paper exit roller 2 | | ● | | | | |
| | | (11) Reversal paper exit roller | | ● | | | | |
| 5 | Final check | (1) Paper feeding check | | | ● | | | |
| | | (2) Exterior cleaning | | ● | | | | |

3. FNS [FN-104] (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|-------------|--------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replac-ment | Supply |
| 1 | Preparation | (1) Paper feeding check | | | ● | | | |
| 2 | Conveyance section | (1) Conveyance roller | | ● | | | | |
| | | (2) Intermediate conveyance roller (sponge roller) 4014-1055-01 | 4 | | | | ● | |
| 3 | Paper exit section | (1) Paper exit roller A (sponge roller) 4014-1055-01 | 10 | | | | ● | |
| | | (2) Cleaning of area around paper exit roller A | | ● | | | | |
| 4 | Drive section | (1) Main drive unit *1 | | | ● | (●) | | |
| | | (2) Tray up unit *1 | | | ● | (●) | | |
| | | (3) Shift drive unit *1 | | | ● | (●) | | |
| | | (4) Paper exit drive unit *1 | | | ● | (●) | | |
| | | (5) Staple unit *1 | | | ● | (●) | | |
| 5 | Stapler unit | (1) Staple cartridge | 2 | | ● | | (●) | |
| 6 | Final check | (1) Paper through check | *2 | | ● | | | |
| | | (2) Exterior cleaning | | ● | ● | | | |

4. FNS [FN-4] (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|-------------|--------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replac-ment | Supply |
| 1 | Preparation | (1) Paper feeding check | | | ● | | | |
| 2 | Conveyance section | (1) Conveyance roller | | ● | | | | |
| | | (2) Intermediate conveyance roller (sponge roller) 4014-1055-01 | 4 | | | | ● | |
| 3 | Paper exit section | (1) Paper exit roller A (sponge roller) 4014-1055-01 | 10 | | | | ● | |
| | | (2) Cleaning of area around paper exit roller A | | ● | | | | |
| 4 | Drive section | (1) Main drive unit *1 | | | ● | (●) | | |
| | | (2) Tray up unit *1 | | | ● | (●) | | |
| | | (3) Shift drive unit *1 | | | ● | (●) | | |
| | | (4) Paper exit drive unit *1 | | | ● | (●) | | |
| | | (5) Staple unit *1 | | | ● | (●) | | |
| | | (6) Folding unit *1 | | | ● | (●) | | |
| 5 | Folding unit | (1) Flat belt | | | ● | | | |
| | | (2) Folding roller | | ● | | | | |
| | | (3) Pressure roller | | ● | | | | |
| 6 | Stapler unit | (1) Staple cartridge | 2 | | ● | | (●) | |
| 7 | Final check | (1) Paper through check | *2 | | ● | | | |
| | | (2) Exterior cleaning | | ● | ● | | | |

*1: If abnormal sound is heard due to insufficient oil, apply oil (Plus guard No. 2).

*2: Check if the staple is clinched correctly.

Note: The Part Number supported may change in the future.

5. LCT [C-305/305L] (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Materials/tools used |
|----|-------------------|--|--------------------------|-------------------------------|-------------|--------------|-------------|--------|-------------------------------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replac-ment | Supply | |
| 1 | Preparation | (1) Paper feeding check | | | ● | | | | |
| 2 | Inside of machine | (1) Paper dust removing brush cleaning | | ● | | | | | Cleaning pad/ blower brush |
| | | (2) Feed sensor cleaning | | ● | | | | | Blower brush |
| | | (3) Pre-registration sensor cleaning | | ● | | | | | Blower brush |
| 3 | Final check | (1) Paper feeding check | | | ● | | | | |
| | | (2) Exterior cleaning | | ● | | | | | Drum cleaner/ cleaning pad |

6. Cover Inserter A (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Materials/tools used |
|----|--------------------|--------------------------------------|--------------------------|-------------------------------|-------------|--------------|-------------|--------|----------------------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replac-ment | Supply | |
| 1 | Conveyance section | (1) Conveyance roller | | ● | | | | | |
| 2 | Paper feed section | (1) Paper feed roller *1 | | ● | | | | | |
| | | (2) Feed roller *1 | | ● | | | | | |
| | | (3) Double feed prevention roller *1 | | ● | | | | | |
| 3 | Final check | (1) Paper feeding check | | | ● | | | | |
| | | (2) Exterior cleaning | | ● | | | | | |

*1: If abnormal sound is heard due to insufficient oil, apply oil (Plus guard No. 2).

7. TU [TMG-1] (Every 250,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|-------------|--------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replac-ment | Supply |
| 1 | Conveyance section | (1) Conveyance rollers | | ● | | | | |
| | | (2) Conveyance belts | | ● | | | | |
| 2 | Trimmer section | (1) Upper knife | | ● | | | | |
| | | (2) Lower knife | | ● | | | | |
| | | (3) Paper scraps box and its area *1 | | ● | ● | | | |
| 3 | Stacker section | (1) Pusher section | | | ● | (●) | | |
| | | (2) Stacker section | | | ● | (●) | | |
| 4 | Drive section | (1) Conveyance drive section | | | ● | | | |
| 5 | Final check | (1) Paper feeding check | | | ● | | | |
| | | (2) Exterior cleaning | | ● | | | | |

*1: Check and clean the remaining scraps.

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[3] Main Unit Periodic Inspection Items**1. Periodic check (I) (Every 500,000 copies)**

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|---------------------------------|--|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Fixing unit | (1) Fixing cleaning web (counter resetting) 4014-3030-01 | 1 | | | | ● | | _____ |
| 2 | Drum carriage | (1) Separation claw replacement 4014-3013-01 | 3 | | | | ● | | _____ |
| | | (2) Drum replacement (counter resetting) | 1 | | | | ● | | _____ |
| 3 | Cleaner | (1) Cleaning blade 4014-3021-01 | 2 | | | | ● | | _____ |
| | | (2) Fur brush 4014-3032-01 | 1 | | | | ● | | _____ |
| | | (3) Scattering prevention felt 4014-3020-01 | 1 | | | | ● | | _____ |
| 4 | Charging corona unit | (1) Charging control plate 4014-3009-01 | 1 | | | | ● | | _____ |
| | | (2) Charging wire cleaning unit 4014-3022-01 | 1 | | | | ● | | _____ |
| | | (3) Resin ring (φ2) 4014-1750-01 | 2 | | | | ● | | _____ |
| 5 | Developing unit | (1) Suction filter 4014-3014-01 | 1 | | | | ● | | _____ |
| | | (2) Developer replacement (counter resetting) | 1 | | | | ● | | _____ |
| 6 | Transfer/separation corona unit | (1) Transfer/separation wire 4014-3011-01 | 3 | | | | ● | | _____ |
| | | (2) Transfer wire cleaning unit 4014-3023-01 | 1 | | | | ● | | _____ |
| | | (3) Separation wire cleaning unit 4014-3024-01 | 1 | | | | ● | | _____ |
| | | (4) Transfer/separation vibration proof rubber 4014-3012-01 | 3 | | | | ● | | _____ |
| | | (5) Resin ring (φ2) 4014-1750-01 | 2 | | | | ● | | _____ |

Note: The Part Number supported may change in the future.

2. Periodic check (II) (Every 1,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|---|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|---|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Tray | (1) Paper feed roller (500-sheet tray) 4014-3027-01 | 2 | | | | ● | | Actual replacement count: 300K feeds |
| | | (2) Feed roller (500-sheet tray) 4014-3026-01 | 2 | | | | ● | | |
| | | (3) Double feed prevention roller (500-sheet tray) 4014-3026-01 | 2 | | | | ● | | |
| | | (4) Paper feed roller (1000-sheet tray) 4014-3029-01 | 1 | | | | ● | | Actual replacement count: 500K feeds |
| | | (5) Feed roller (1000-sheet tray) 4014-3028-01 | 1 | | | | ● | | |
| | | (6) Double feed prevention roller (1000-sheet tray) 4014-3028-01 | 1 | | | | ● | | |
| 2 | By-pass tray | (1) Paper feed roller (bypass tray) 4014-3027-01 | 1 | | | | ● | | Actual replacement count: 200K feeds |
| | | (2) Feed roller (bypass tray) 4014-3026-01 | 1 | | | | ● | | |
| | | (3) Double feed prevention roller (bypass tray) 4014-3026-01 | 1 | | | | ● | | |
| 3 | Fixing unit | (1) Fixing upper roller 4014-3015-01 | 1 | | | | ● | | _____ |
| | | (2) Fixing lower roller assembly 4014-3031-01 | 1 | | | | ● | | _____ |
| | | (3) Fixing claw (upper) 4014-3017-01 | 6 | | | | ● | | _____ |
| | | (4) Fixing claw (lower) 4014-3002-01 | 2 | | | | ● | | _____ |
| | | (5) Insulating sleeve (upper) 4014-3007-01 | 2 | | | | ● | | _____ |
| | | (6) Upper roller bearing 4014-1747-01 | 2 | | | | ● | | _____ |
| | | (7) Cleaning roller 4014-3019-01 | 1 | | | | ● | | _____ |
| | | (8) Heat roller cleaning | | ● | | | | | _____ |

Note: The Part Number supported may change in the future.

3. Periodic check (III) (Every 3,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|---------------------------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Drum | (1) Drum temperature sensor 4014-3259-01 | 1 | | | | ● | | _____ |
| 2 | Transfer/separation corona unit | (1) Transfer/separation corona unit 4014-3202-01 | 1 | | | | ● | | _____ |
| 3 | Registration | (1) Registration roller 4014-2038-01 | 1 | | | | ● | | _____ |
| | | (2) Registration bearing 4014-2172-01 | 2 | | | | ● | | _____ |
| | | (3) Registration loop roller 4014-3167-01 | 1 | | | | ● | | _____ |
| | | (4) Registration clutch 4014-2290-01 | 1 | | | | ● | | _____ |
| 4 | ADU | (1) Paper reverse/exit roller 1 4014-2062-01 | 1 | | | | ● | | _____ |
| 5 | Fixing | (1) Insulating sleeve (heating roller) 4014-3007-01 | 2 | | | | ● | | _____ |
| | | (2) Heating roller bearing 4014-3006-01 | 2 | | | | ● | | _____ |
| | | (3) Temperature sensor (upper roller fault) 4014-2300-01 | 1 | | | | ● | | _____ |
| | | (4) Temperature sensor (heating roller fault) 4014-2302-01 | 1 | | | | ● | | _____ |
| | | (5) Fixing heating roller 4014-3016-01 | 1 | | | | ● | | _____ |
| | | (6) Exit actuator 4014-2125-01 | 1 | | | | ● | | _____ |
| | | (7) Heater lamp L2 4014-3035-01 | 2 | | | | ● | | _____ |
| | | (8) Heater lamp L3 4014-3036-01 | 1 | | | | ● | | _____ |
| | | (9) Heater lamp L4 4014-3038-01 | 1 | | | | ● | | _____ |
| | | (10) Fixing web driving motor 1 4014-2289-01 | 1 | | | | ● | | _____ |
| 6 | Main body | (1) Ozone filter 1 4014-1795-01 | 2 | | | | ● | | _____ |
| | | (2) Ozone filter 2 4014-1843-01 | 1 | | | | ● | | _____ |
| 7 | Toner supply | (1) Toner supply sleeve 1 4014-3207-01 | 1 | | | | ● | | _____ |
| | | (2) Toner supply sleeve 2 4014-3208-01 | 1 | | | | ● | | _____ |

4. Periodic check (IV) (Every 4,500,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Tray | (1) Feed clutch 4014-2290-01 | 3 | | | | ● | | Actual replacement count: 3,000K feeds |
| | | (2) 1st paper feed clutch 4014-2290-01 | 3 | | | | ● | | |

Note: The Part Number supported may change in the future.

5. Periodic check (V) (Every 6,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|---------------------------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|--|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Charging corona unit | (1) Charging corona unit 4014-1896-01 | 1 | | | | ● | | _____ |
| | | (2) PCL 4014-1899-01 | 1 | | | | ● | | _____ |
| 2 | Developing unit | (1) Developing unit 4014-3025-01 | 1 | | | | ● | | _____ |
| 3 | Transfer/separation corona unit | (1) TSL 4014-2292-01 | 1 | | | | ● | | _____ |
| 4 | Vertical conveyance section | (1) Vertical conveyance clutch 4014-2291-01 | 2 | | | | ● | | Actual replacement count: 4,500K feeds |
| | | (2) Vertical conveyance roller (upper) 4014-2023-01 | 1 | | | | ● | | |
| | | (3) Passage detection sensor cleaning | | ● | | | | | |
| | | (4) Exit sensor cleaning | | ● | | | | | |
| 5 | Fixing unit | (1) Fixing drive gear 2 4014-2237-01 | 1 | | | | ● | | _____ |
| 6 | ADU | (1) Pre-registration roller 4014-2051-01 | 1 | | | | ● | | _____ |
| | | (2) ADU pre-registration bearing 4014-2174-01 | 2 | | | | ● | | _____ |
| | | (3) Pre-registration loop roller 4014-2050-01 | 1 | | | | ● | | _____ |
| | | (4) ADU exit roller 4014-2050-01 | 1 | | | | ● | | _____ |
| | | (5) ADU reversal sensor cleaning | | ● | | | | | _____ |
| | | (6) Reversal entrance section roller 4014-2070-01 | 1 | | | | ● | | _____ |
| | | (7) Paper reverse/exit roller 2 4014-2065-01 | 1 | | | | ● | | _____ |
| | | (8) Paper reverse/exit roller 3 4014-2063-01 | 1 | | | | ● | | _____ |
| | | (9) ADU reverse roller 4014-2071-01 | 1 | | | | ● | | _____ |
| | | (10) ADU horizontal conveyance roller 1 4014-2050-01 | 1 | | | | ● | | _____ |
| | | (11) ADU horizontal conveyance roller 2 4014-2050-01 | 1 | | | | ● | | _____ |
| | | (12) ADU pre-registration clutch 4014-2290-01 | 1 | | | | ● | | _____ |
| 7 | Main body | (1) Paper exit sensor cleaning | 1 | ● | | | | | _____ |

Note: The Part Number supported may change in the future.

6. Periodic check (VI) (Every 10,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|-----------------------------|--|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|---------|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Vertical conveyance section | (1) Vertical conveyance roller (middle, lower) 4014-2024-01 | 2 | | | | ● | | — |
| 2 | ADU | (1) Sensor actuator 4014-3004-01 | 3 | | | | ● | | |
| | | (2) Guide part/Front 4014-2056-01 | 1 | | | | ● | | |
| | | (3) Guide part/Rear 4014-2057-01 | 1 | | | | ● | | |
| | | (4) Guide part 4014-2066-01 | 4 | | | | ● | | |
| 3. | Tray | (1) Pre-registration roller (500-sheet tray, 1000-sheet tray) 4014-1948-01 | 3 | | | | ● | | |

[4] RADF [EDH-2]

1. Periodic check (I) (Every 1,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|--|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|--------------------------------------|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Paper feed section | (1) Paper feed roller 4014-1446-01 | 1 | | | | ● | | Actual replacement count: 200K feeds |
| | | (2) Separation roller 4014-1447-01 | 1 | | | | ● | | |
| | | (3) Double feed prevention roller 4014-1448-01 | 1 | | | | ● | | |
| | | (4) Separation assist roller 4014-1443-01 | 1 | | | | ● | | |

2. Periodic check (II) (Every 2,500,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|---------------------------------|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|--------------------------------------|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Paper feed section | (1) Torque limiter 4014-3136-01 | 1 | | | | ● | | Actual replacement count: 500K feeds |

Note: The Part Number supported may change in the future.

[5] FNS [FN-104]

1. Periodic check (I) (Every 1,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|-------------------------------|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|--|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Stapler unit | (1) Stapler unit 4014-1095-01 | 2 | | | | ● | | Actual replacement count: Each 200K staples |

2. Periodic check (II) (Every 6,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|--|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|---|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Drive unit | (1) Paper feed motor *1 (Tray up/down unit motor) 4014-3105-01 | 1 | | | | ● | | Actual replacement count: 2,500K feeds |

*1: When the motor is removed by CE, please remove it holding the up/down tray to paper exit with hand.

[6] FNS [FN-4]

1. Periodic check (I) (Every 1,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|-------------------------------|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|--|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Stapler unit | (1) Stapler unit 4014-1095-01 | 2 | | | | ● | | Actual replacement count: Each 200K staples |

2. Periodic check (II) (Every 6,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|----------------|--|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|---|
| | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Drive unit | (1) Paper feed motor (Tray up/down unit motor) *1 4014-3105-01 | 1 | | | | ● | | Actual replacement count: 2,500K feeds |

*1: When the motor is removed by CE, please remove it holding the up/down tray to paper exit with hand.

Note: The Part Number supported may change in the future.

[7] LCT [C-305/305L]**1. Periodic check (I) (Every 500,000 copies)**

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|-------------------|--|--------------------------|-------------------------------|-------------|--------------|--------------|--------|--------------------------------------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Inside of machine | (1) Paper feed roller 4014-3029-01 | 1 | | | | ● | | Actual replacement count: 500K feeds |
| | | (2) Feed roller 4014-3028-01 | 1 | | | | ● | | |
| | | (3) Double feed prevention roller 4014-3028-01 | 1 | | | | ● | | |

2. Periodic check (II) (Every 3,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|-------------------|------------------------------|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Inside of machine | (1) Feed clutch 4014-2290-01 | 1 | | | | ● | | Actual replacement count: 3,000 K feeds |
| | | (2) Conveyance 4014-2290-01 | 1 | | | | ● | | |

3. Periodic check (III) (Every 10,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|--|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Paper feed section | (1) Pre-registration roller 4014-1546-01 | 1 | | | | ● | | — |

[8] Cover Inserter A**1. Periodic check (I) (Every 500,000 copies)**

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---------------------------------------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Paper feed section | (1) Feed roller assembly B 4014-3153-01 | 1 | | | | ● | | Actual replacement count: 100 K feeds |
| | | (2) Double feed prevention roller assembly 4014-3121-01 | 1 | | | | ● | | Actual replacement count: 100 K feeds |

2. Periodic check (II) (Every 1,000,000 copies)

| NO | Classification | Service item | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|---|--------------------------|-------------------------------|-------------|--------------|--------------|--------|---------------------------------------|
| | | | | Clea-ning | Inspe-ction | Lubri-cation | Replace-ment | Supply | |
| 1 | Paper feed section | (1) Feed roller assembly A 4014-3152-01 | 1 | | | | ● | | Actual replacement count: 200 K feeds |

Note: The Part Number supported may change in the future.

[9] TU [TMG-1]

1. Periodic check (I) (Every 10,000,000 copies)

| NO | Classification | Service item | | Number of parts replaced | Implementation classification | | | | | Remarks |
|----|--------------------|-----------------|--------------|--------------------------------|-------------------------------|-----------------|------------------|------------------|--------|--|
| | | | | | Clea- ning | Inspe- ction | Lubri- cation | Replace- ment | Supply | |
| 1 | Trimmer section | (1) Upper knife | 4014-3051-01 | 1 | | | | ● | | Actual replacement count: 500 K times |
| | | (2) Lower knife | 4014-3052-01 | 1 | | | | ● | | |

[10] Replacement parts list

1. Main body

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|--|--------------|------|-------------|--------------|-----------------|
| 1 | Maintenance (Every 250,000 copies) | Charging wire | 4014-3010-01 | 2 | 250,000 | | |
| | | Charging wire unit vibration proof rubber | 4014-3003-01 | 2 | 250,000 | | |
| 2 | Periodic check (I) (Every 500,000 copies) | Fixing cleaning web | 4014-3030-01 | 1 | 500,000 | | |
| | | Separation claw | 4014-3013-01 | 3 | 500,000 | | |
| | | Cleaning blade | 4014-3021-01 | 2 | 500,000 | | |
| | | Fur brush | 4014-3032-01 | 1 | 500,000 | | |
| | | Scattering prevention felt | 4014-3020-01 | 1 | 500,000 | | |
| | | Charging control plate | 4014-3009-01 | 1 | 500,000 | | |
| | | Charging wire cleaning unit | 4014-3022-01 | 2 | 500,000 | | |
| | | Resin ring (φ2) | 4014-1750-01 | 2 | 500,000 | | |
| | | Suction filter | 4014-3014-01 | 1 | 500,000 | | |
| | | Transfer/separation wire | 4014-3011-01 | 3 | 500,000 | | |
| | | Transfer wire cleaning unit | 4014-3023-01 | 1 | 500,000 | | |
| | | Separation wire cleaning unit | 4014-3024-01 | 1 | 500,000 | | |
| | | Transfer/separation vibration proof rubber | 4014-3012-01 | 3 | 500,000 | | |
| | | Resin ring (φ2) | 4014-1750-01 | 2 | 500,000 | | |
| | | Drum | - | 1 | 500,000 | | |
| | | Developer | - | 1 | 500,000 | | |
| 3 | Periodic check (II) (Every 1,000,000 copies) | Paper feed roller (Tray1/500-sheet) | 4014-3027-01 | 1 | | 300,000 | 31 |
| | | Feed roller (Tray1/500-sheet) | 4014-3026-01 | 1 | | 300,000 | 32 |
| | | Double feed prevention roller (Tray1/500-sheet) | 4014-3206-01 | 1 | | 300,000 | 32 |
| | | Paper feed roller (Tray2/500-sheet) | 4014-3027-01 | 1 | | 300,000 | 36 |
| | | Feed roller (Tray2/500-sheet) | 4014-3026-01 | 1 | | 300,000 | 37 |
| | | Double feed prevention roller (Tray2/500-sheet) | 4014-3026-01 | 1 | | 300,000 | 37 |
| | | Paper feed roller (Tray3/1000-sheet) | 4014-3029-01 | 1 | | 500,000 | 41 |
| | | Feed roller (Tray3/1000-sheet) | 4014-3028-01 | 1 | | 500,000 | 42 |
| | | Double feed prevention roller (Tray3/1000-sheet) | 4014-3028-01 | 1 | | 500,000 | 42 |
| | | Paper feed roller (bypass tray) | 4014-3027-01 | 1 | | 200,000 | 46 |
| | | Feed roller (bypass tray) | 4014-3026-01 | 1 | | 200,000 | 47 |
| | | Double feed prevention roller (bypass tray) | 4014-3026-01 | 1 | | 200,000 | 47 |
| | | Fixing roller (upper) | 4014-3015-01 | 1 | 1,000,000 | | |
| | | Fixing roller (lower) assembly | 4014-3031-01 | 1 | 1,000,000 | | |
| | | Fixing claw (upper) | 4014-3017-01 | 6 | 1,000,000 | | |
| | | Fixing claw (lower) | 4014-3002-01 | 2 | 1,000,000 | | |
| | | Insulating sleeve (upper) | 4014-3007-01 | 2 | 1,000,000 | | |
| | | Upper roller bearing | 4014-1747-01 | 2 | 1,000,000 | | |
| | | Cleaning roller | 4014-3019-01 | 1 | 1,000,000 | | |

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|--|--|--------------|------|-------------|--------------|-----------------|
| 4 | Periodic check (III) (Every 3,000,000 copies) | Drum temperature sensor | 4014-3259-01 | 1 | 3,000,000 | | |
| | | Transfer/separation corona unit | 4014-3202-01 | 1 | 3,000,000 | | |
| | | Registration roller | 4014-2038-01 | 1 | 3,000,000 | | |
| | | Registration bearing | 4014-2172-01 | 2 | 3,000,000 | | |
| | | Registration loop roller | 4014-3167-01 | 1 | 3,000,000 | | |
| | | Registration clutch | 4014-2290-01 | 1 | 3,000,000 | | |
| | | Reversal paper exit roller 1 | 4014-2062-01 | 1 | 3,000,000 | | |
| | | Insulating sleeve (heating roller) | 4014-3007-01 | 2 | 3,000,000 | | |
| | | Heating roller bearing | 4014-3006-01 | 2 | 3,000,000 | | |
| | | Temperature sensor (upper roller fault) | 4014-2300-01 | 1 | 3,000,000 | | |
| | | Temperature sensor (heating roller fault) | 4014-2302-01 | 1 | 3,000,000 | | |
| | | Fixing heating roller | 4014-3016-01 | 1 | 3,000,000 | | |
| | | Exit actuator | 4014-2125-01 | 1 | 3,000,000 | | |
| | | Heater lamp L2 (200V) | 4014-3035-01 | 1 | 3,000,000 | | |
| | | Heater lamp L3 (200V) | 4014-3036-01 | 1 | 3,000,000 | | |
| | | Heater lamp L4 (200V) | 4014-3038-01 | 1 | 3,000,000 | | |
| | | Fixing web driving motor 1 | 4014-2289-01 | 1 | 3,000,000 | | |
| | | Ozone filter 1 | 4014-1795-01 | 2 | 3,000,000 | | |
| | | Ozone filter 2 | 4014-1843-01 | 1 | 3,000,000 | | |
| | | Toner supply sleeve 1 | 4014-3207-01 | 1 | 3,000,000 | | |
| | | Toner supply sleeve 2 | 4014-3208-01 | 1 | 3,000,000 | | |
| 5 | Periodic check (IV) (Every 4,500,000 copies) | Feed clutch (Tray1) | 4014-2290-01 | 1 | | 3,000,000 | 33 |
| | | 1st paper feed clutch (Tray1) | 4014-2290-01 | 1 | | 3,000,000 | 34 |
| | | Feed clutch (Tray2) | 4014-2290-01 | 1 | | 3,000,000 | 38 |
| | | 1st paper feed clutch (Tray2) | 4014-2290-01 | 1 | | 3,000,000 | 39 |
| | | Feed clutch (Tray3) | 4014-2290-01 | 1 | | 3,000,000 | 43 |
| | | 1st paper feed clutch(Tray3) | 4014-2290-01 | 1 | | 3,000,000 | 44 |
| 6 | Periodic check (V) (Every 6,000,000 copies) | Charging corona unit | 4014-1896-01 | 1 | 6,000,000 | | |
| | | PCL | 4014-1899-01 | 1 | 6,000,000 | | |
| | | Developing unit | 4014-3025-01 | 1 | 6,000,000 | | |
| | | TSL | 4014-2292-01 | 1 | 6,000,000 | | |
| | | Vertical conveyance clutch | 4014-2291-01 | 2 | | 4,500,000 | 57 |
| | | Vertical conveyance roller (upper) | 4014-2023-01 | 1 | | 4,500,000 | 54 |
| | | Fixing drive gear 2 | 4014-2237-01 | 1 | 6,000,000 | | |
| | | Pre-registration roller | 4014-2051-01 | 1 | 6,000,000 | | |
| | | ADU pre-registration bearing | 4014-2174-01 | 2 | 6,000,000 | | |
| | | Pre-registration loop roller | 4014-2050-01 | 1 | 6,000,000 | | |
| | | ADU exit roller | 4014-2050-01 | 1 | 6,000,000 | | |
| | | Reversal entrance section roller | 4014-2070-01 | 1 | 6,000,000 | | |
| | | Reversal paper exit roller 2 | 4014-2065-01 | 1 | 6,000,000 | | |
| | | Reversal paper exit roller 3 | 4014-2063-01 | 1 | 6,000,000 | | |
| | | ADU reversal roller | 4014-2071-01 | 1 | 6,000,000 | | |
| | | ADU horizontal conveyance roller 1 | 4014-2050-01 | 1 | 6,000,000 | | |
| | | ADU horizontal conveyance roller 2 | 4014-2050-01 | 1 | 6,000,000 | | |
| | | ADU preregistration clutch | 4014-2290-01 | 1 | 6,000,000 | | |
| 7 | Periodic check (VI) (Every 10,000,000 copies) | Vertical conveyance roller (middle, lower) | 4014-2024-01 | 2 | 10,000,000 | | |
| | | Sensor actuator | 4014-3004-01 | 3 | 10,000,000 | | |
| | | Guide part/Front | 4014-2056-01 | 1 | 10,000,000 | | |
| | | Guide part/Rear | 4014-2057-01 | 1 | 10,000,000 | | |
| | | Guide part | 4014-2066-01 | 4 | 10,000,000 | | |
| | | Pre-registration roller (500-sheet tray, 1000-sheet tray) | 4014-1948-01 | 3 | 10,000,000 | | |

2. EDH-2

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|-------------------------------|--------------|------|-------------|--------------|-----------------|
| 1 | Periodic check (I) (Every 1,000,000 copies) | Paper feed roller | 4014-1446-01 | 1 | | 200,000 | 66 |
| | | Separation roller | 4014-1447-01 | 1 | | 200,000 | 67 |
| | | Double feed prevention roller | 4014-1448-01 | 1 | | 200,000 | 68 |
| | | Separation assist roller | 4014-1443-01 | 1 | | 200,000 | 69 |
| 2 | Periodic check (II) (Every 2,500,000 copies) | Torque limiter | 4014-3136-01 | 1 | | 500,000 | 70 |

3. FN-104/FN-4

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|--------------------------------|--------------|------|-------------|--------------|-----------------|
| 1 | Maintenance (Every 250,000 copies) | Intermediate conveyance roller | 4014-1055-01 | 4 | 250,000 | | |
| | | Paper exit roller A | 4014-1055-01 | 10 | 250,000 | | |
| | | Staple cartridge | — | 2 | 250,000 | | |
| 2 | Periodic check (I) (Every 1,000,000 copies) | Stapler unit/Front | 4014-1095-01 | 1 | | 200,000 | 59 |
| | | Stapler unit/Rear | 4014-1095-01 | 1 | | 200,000 | 60 |
| 3 | Periodic check (II) (Every 6,000,000 copies) | Paper feed motor | 4014-3105-01 | 1 | | 2,500,000 | 58 |

4. C-305/305L

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|-------------------------------|--------------|------|-------------|--------------|-----------------|
| 1 | Periodic check (I) (Every 500,000 copies) | Paper feed roller | 4014-3029-01 | 1 | | 500,000 | 49 |
| | | Feed roller | 4014-3028-01 | 1 | | 500,000 | 50 |
| | | Double feed prevention roller | 4014-3028-01 | 1 | | 500,000 | 50 |
| 2 | Periodic check (II) (Every 3,000,000 copies) | Feed clutch | 4014-2290-01 | 1 | | 3,000,000 | 51 |
| | | Conveyance clutch | 4014-2290-01 | 1 | | 3,000,000 | 52 |
| 3 | Periodic check (III) (Every 10,000,000 copies) | Pre-regist roller | 4014-1546-01 | 1 | 10,000,000 | | |

5. Cover Inserter A

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|--|--------------|------|-------------|--------------|-----------------|
| 1 | Periodic check (I) (Every 500,000 copies) | Feed roller assembly B | 4014-3153-01 | 1 | | 100,000 | 65 |
| | | Double feed prevention roller assembly | 4014-3121-01 | 1 | | 100,000 | 65 |
| 2 | Periodic check (II) (Every 1,000,000 copies) | Feed roller assembly A | 4014-3152-01 | 1 | | 200,000 | 65 |

6. TMG-1





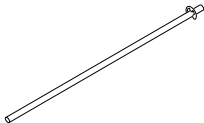
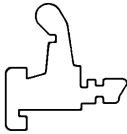

| No. | Classification | Parts name | Parts No. | Q'ty | Total count | Actual count | Parts count No. |
|-----|---|-------------|--------------|------|-------------|--------------|-----------------|
| 1 | Periodic check (I) (Every 10,000,000 copies) | Upper knife | 4014-3051-01 | 1 | | 500,000 | 86 |
| | | Lower knife | 4014-3052-01 | 1 | | 500,000 | 86 |

COPY MATERIALS




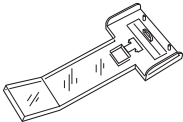
[1] Consumables (Single unit supply)

| Name | Durability/copies |
|-----------------|-------------------|
| Toner cartridge | 50,000 |
| Developer | 500,000 |
| Drum | 500,000 |

CE TOOL LIST

| Material No. | Material Name | Appearance | Quantity | Remarks |
|--------------|--|---|----------|---------|
| 4014-5001-01 | Temp. sensor PS jig/A (for upper fixing roller) |  | 1 | |
| 4014-5002-01 | Temp. sensor PS jig/B (for heating roller) |  | 1 | |
| 4014-5003-01 | Thermostat PS jig/A (for upper fixing roller) |  | 1 | |
| 4014-5004-01 | Thermostat PS jig/B (for heating roller) |  | 1 | |
| 4014-5005-01 | Optics position adjusting jig |  | 2 | |
| 4014-5006-01 | Door switch jig |  | 1 | |
| 4014-5007-01 | Setting powder |  25 g | 1 | |

Note: The Part Number supported may change in the future.

| Material No. | Material Name | Appearance | Quantity | Remarks |
|--------------|----------------|---|----------|---------------------|
| 4014-5008-01 | PS jig |  | 2pc/set | For EDH-2 |
| 4014-5010-01 | ADJ chart |  | 1 | For EDH-2 |
| 4014-5011-01 | White chart |  | 1 | For EDH-2 |
| 4014-5009-01 | Stapler PS jig |  | 1 | For FN-104/ FN-4 |

Note: The Part Number supported may change in the future.

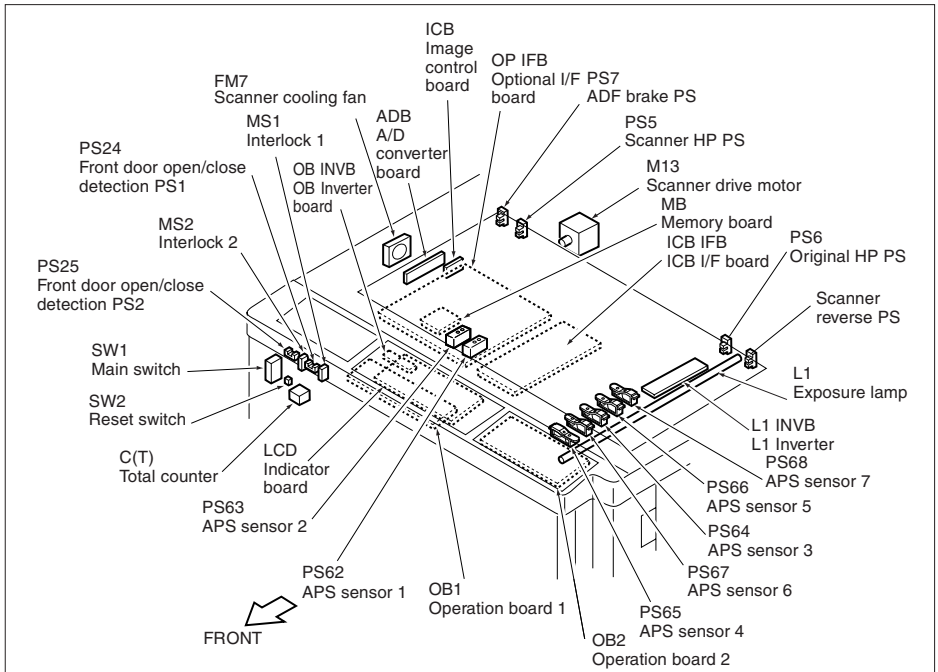
4

ELECTRIC PARTS LIST

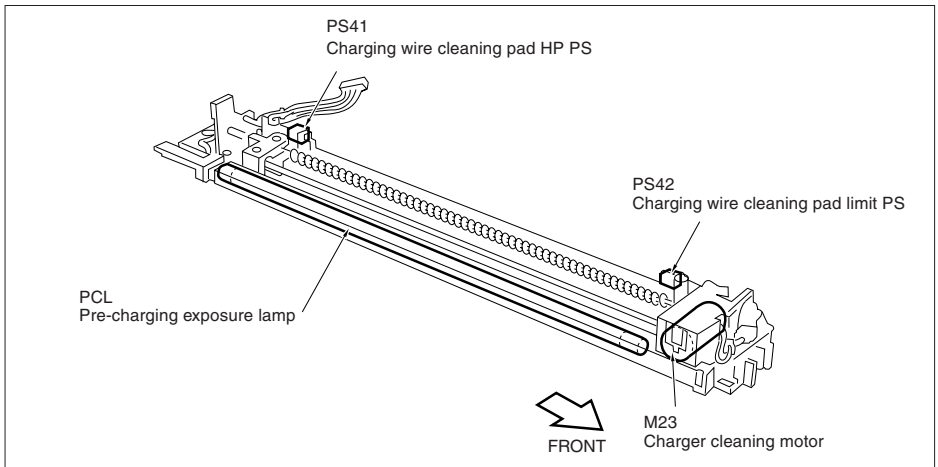
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Di750 ELECTRICAL PARTS LAYOUT DRAWING

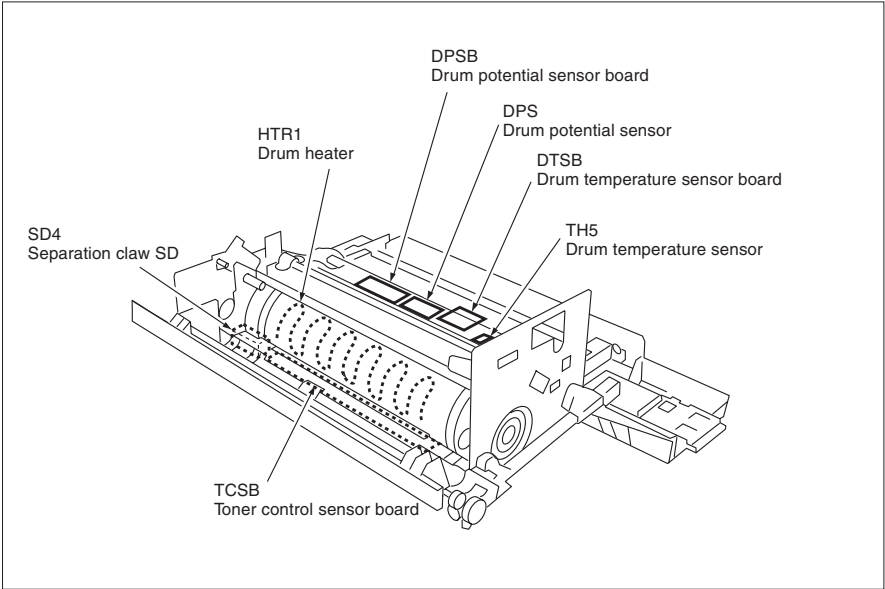
[1] Read Section/Operational Section



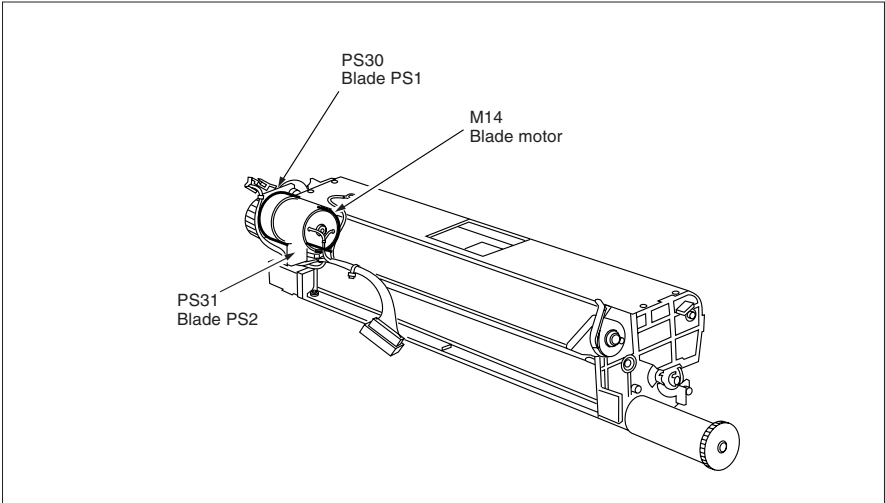
[2] Charging Corona Wire Unit

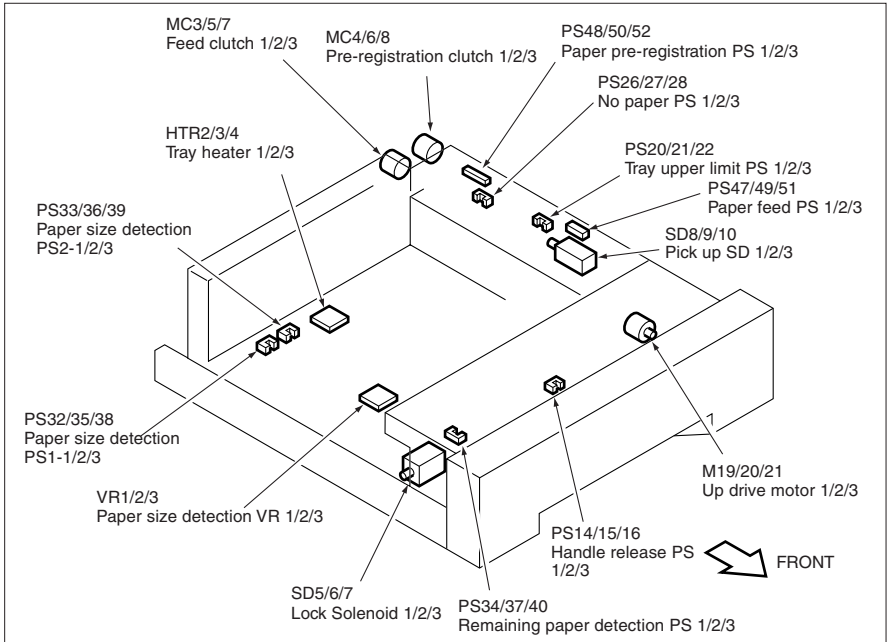
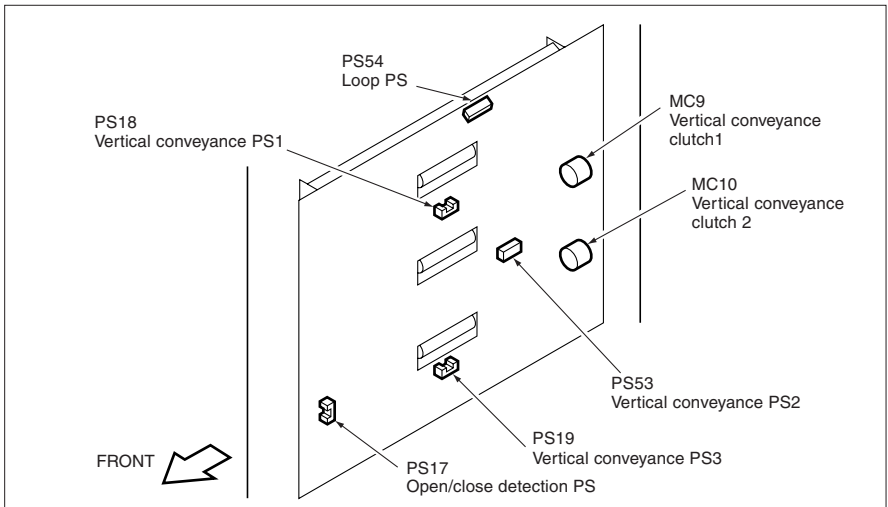


[3] Drum Unit

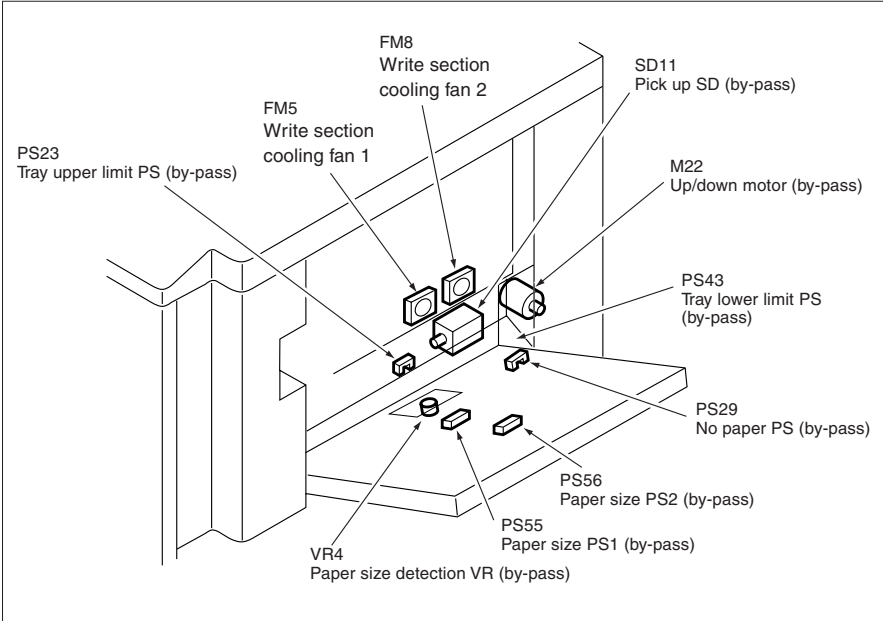


[4] Cleaning Unit

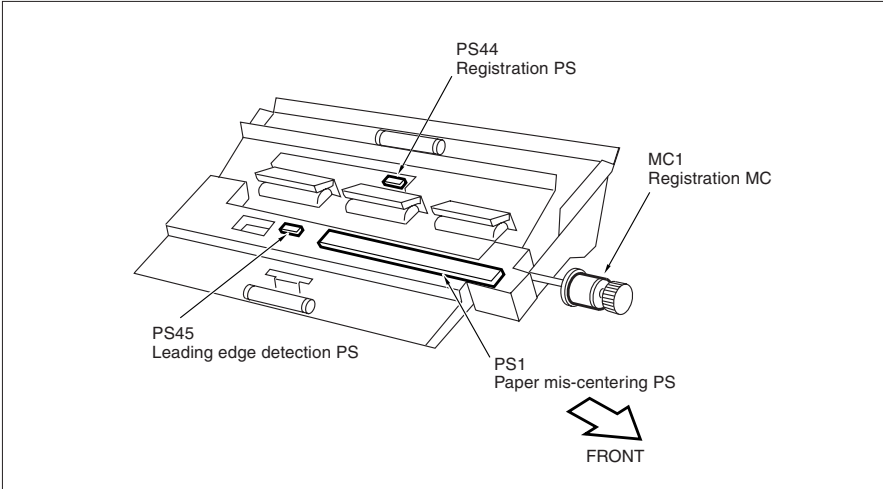


[5] Tray 1,2,3**[6] Vertical Conveyance Section**

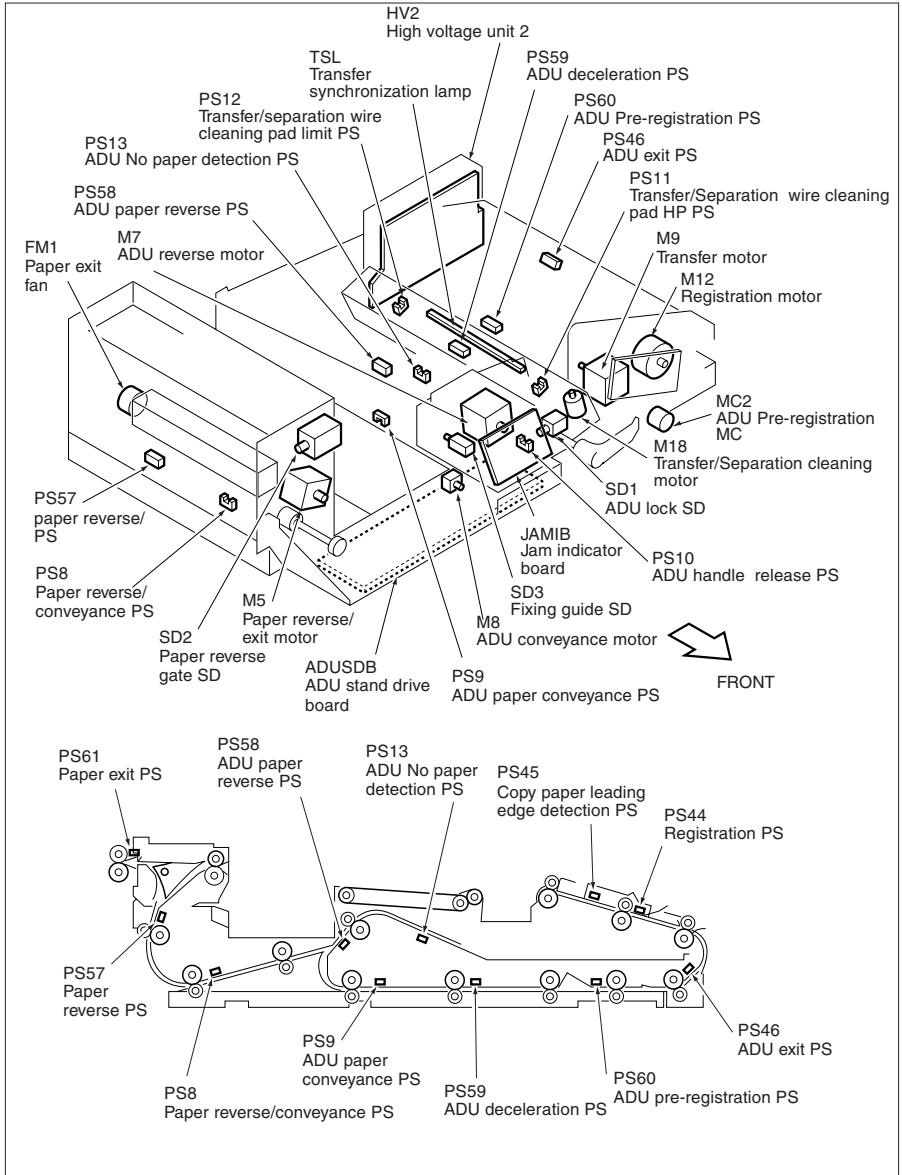
[7] By-pass Feed Section



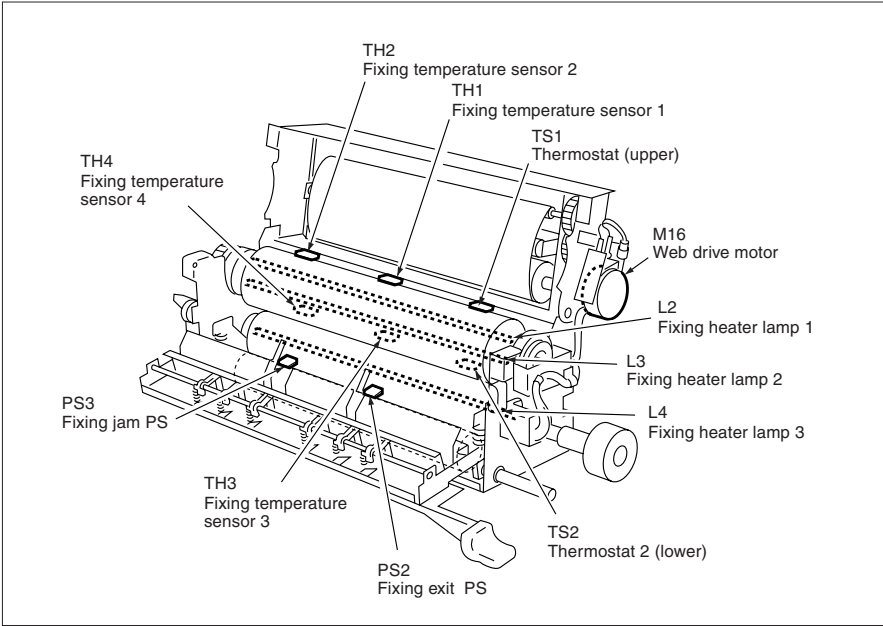
[8] Second Paper Feed Section



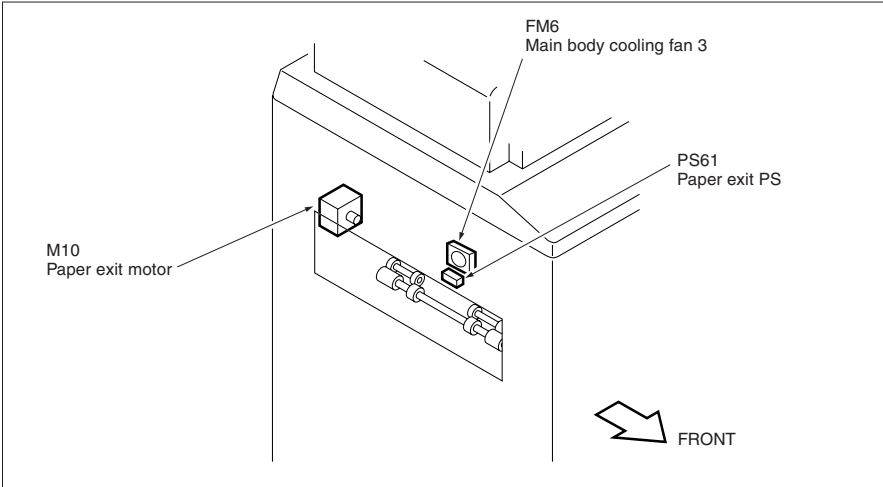
[9] ADU Unit

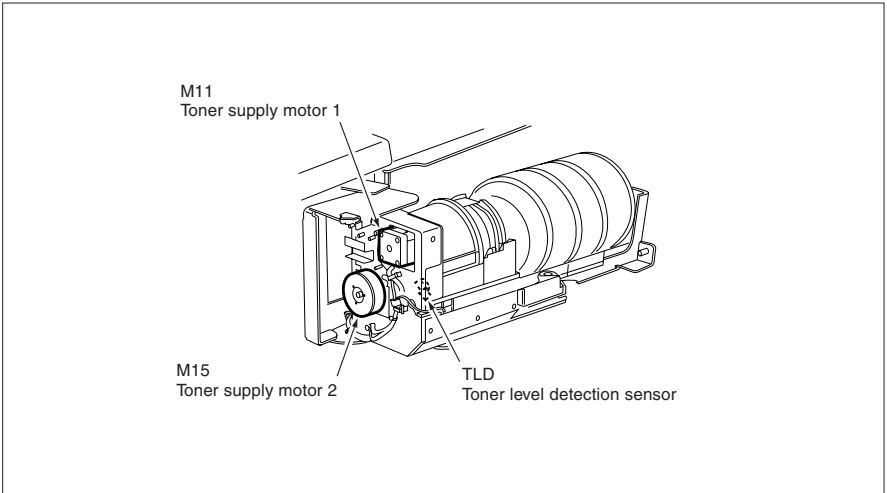
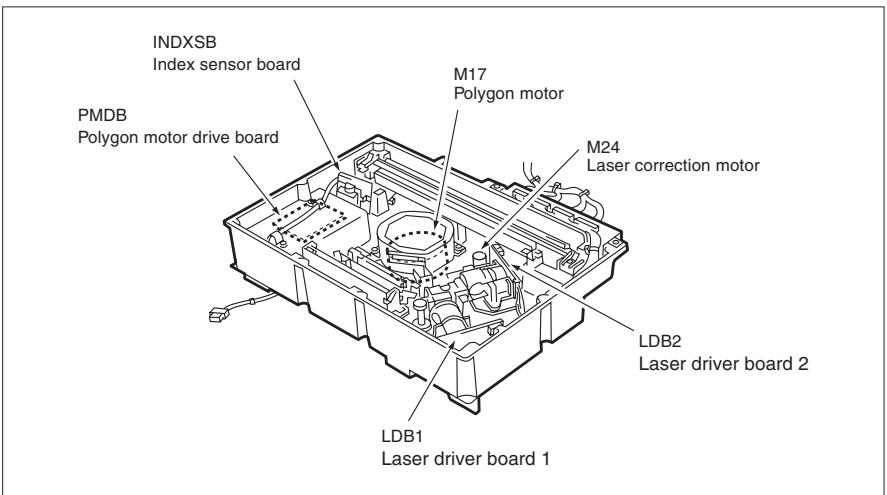


[10] Fixing Unit

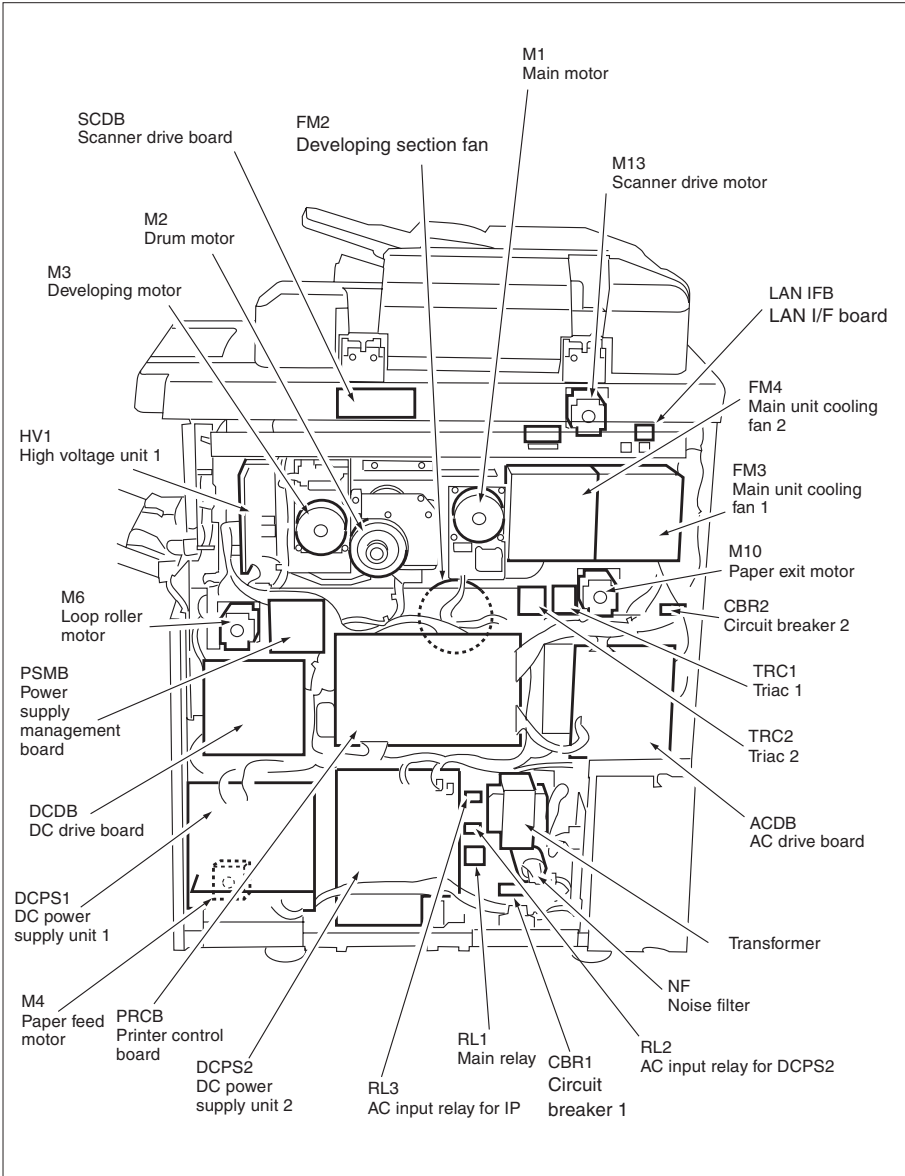


[11] Paper Exit Section



[12] Toner Supply Unit**[13] Write Section**

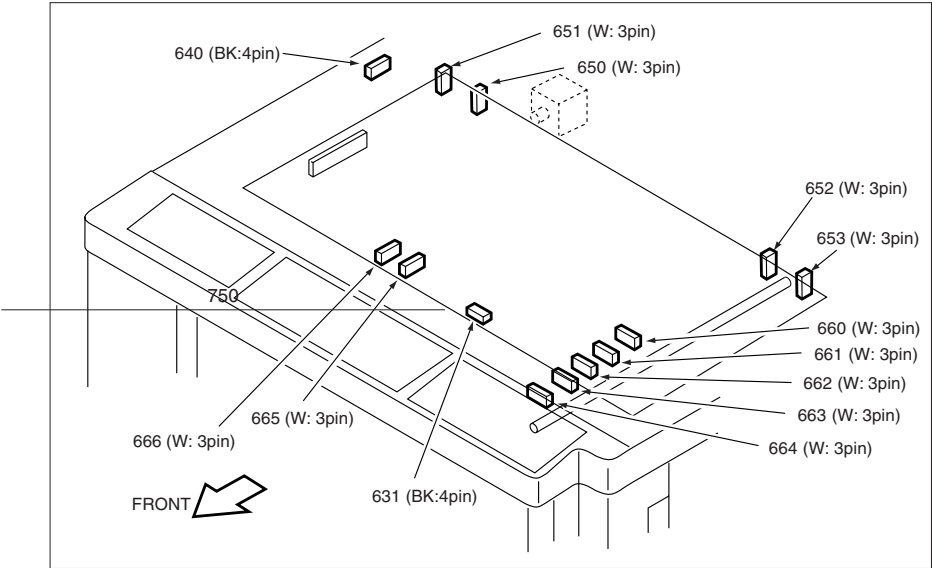
[14] Control/Drive Unit in Rear Section



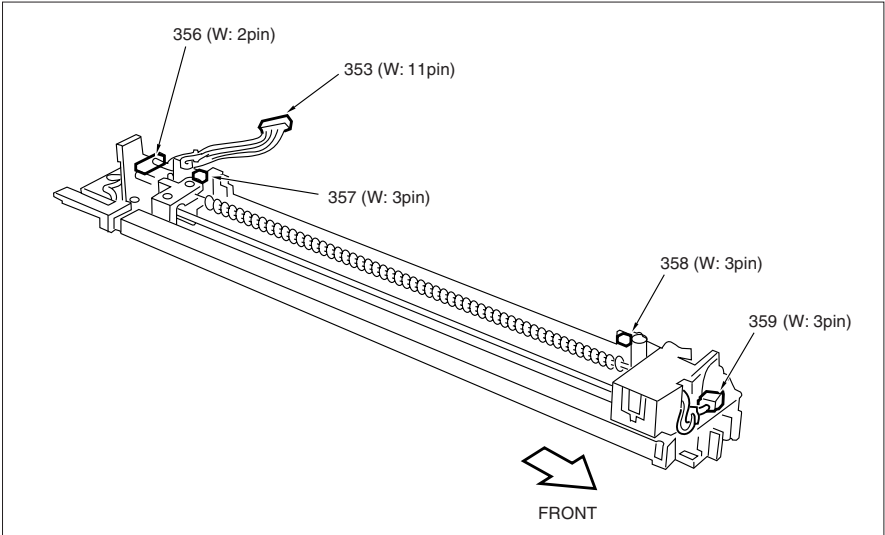
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Di750 CONNECTOR LAYOUT DRAWING

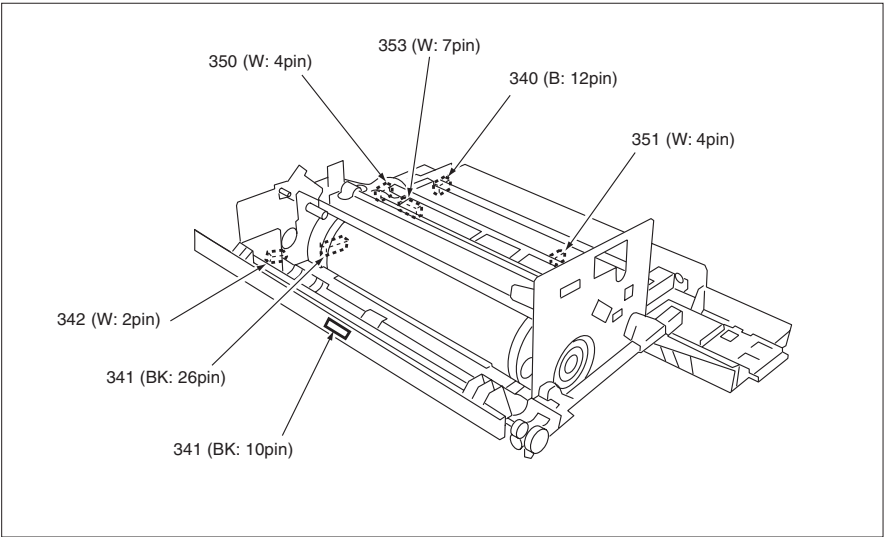
[1] Read Section



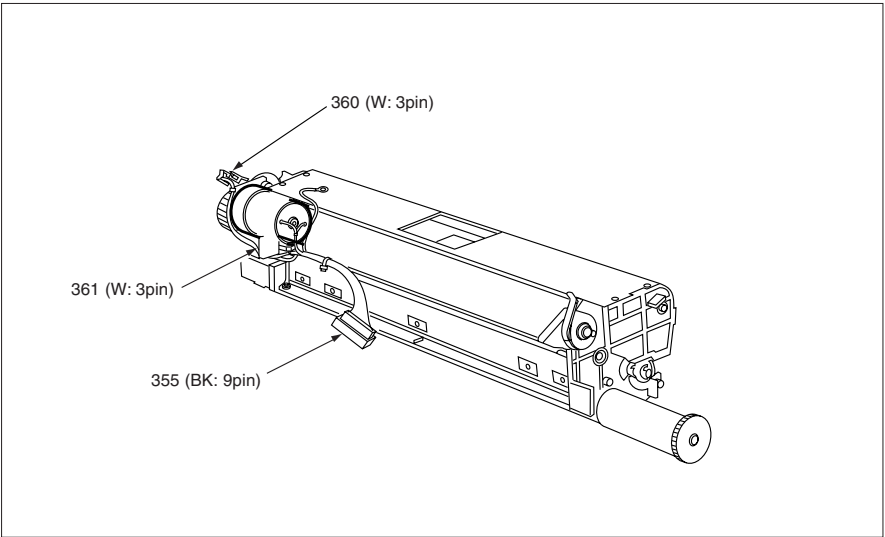
[2] Charging Corona Wire Unit



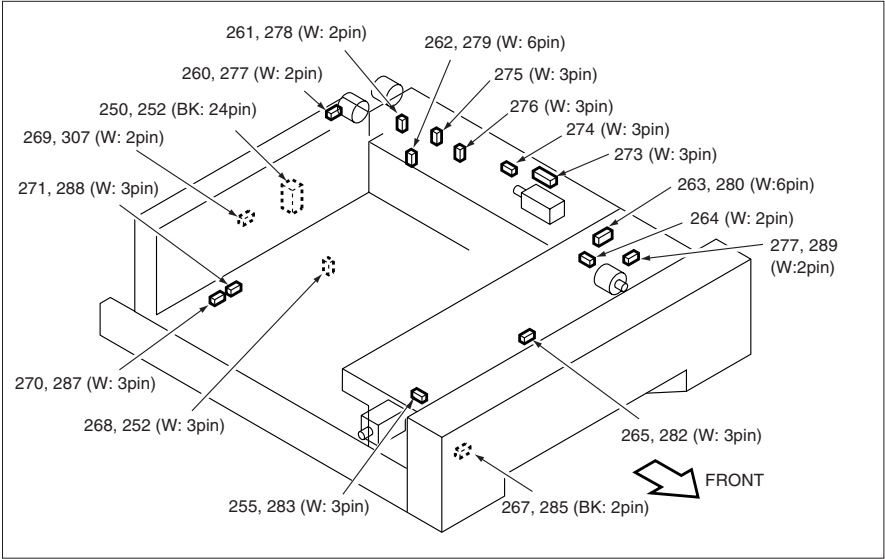
[3] Drum Unit



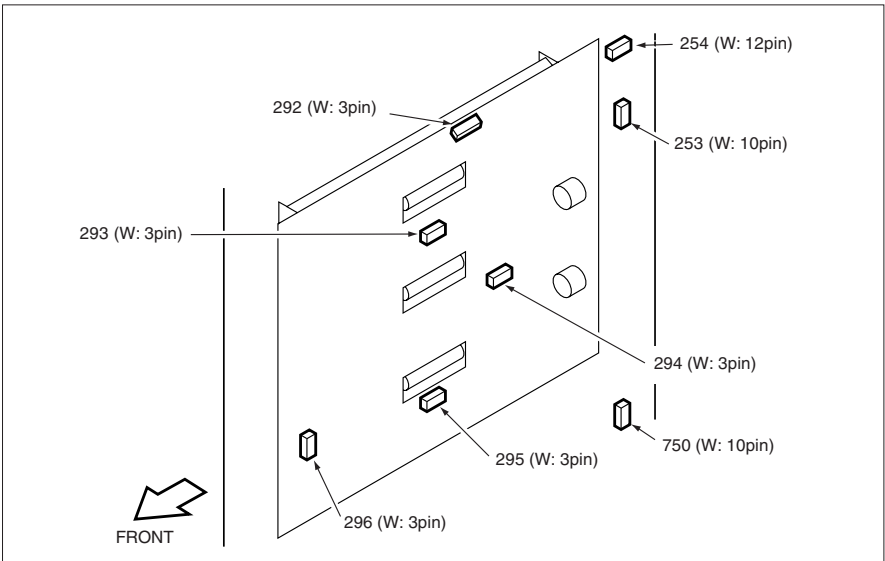
[4] Cleaning Unit



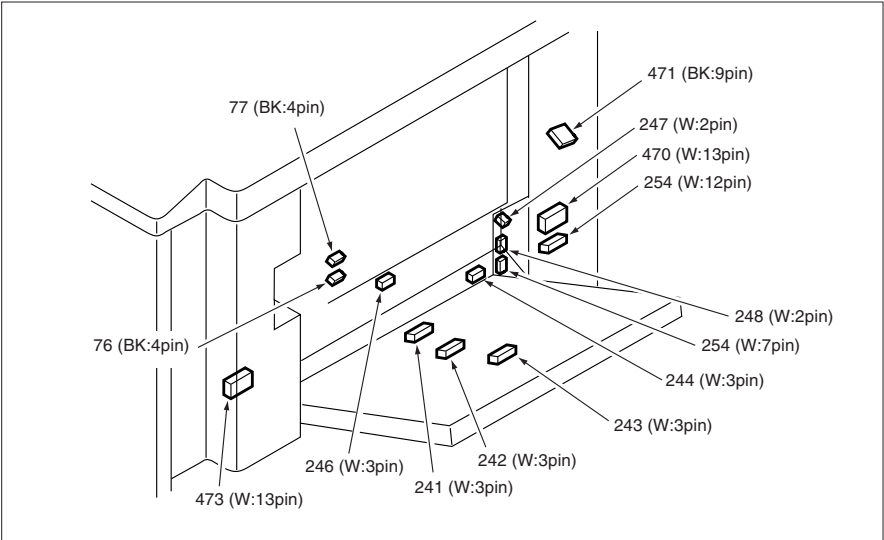
[5] Tray 1,2,3



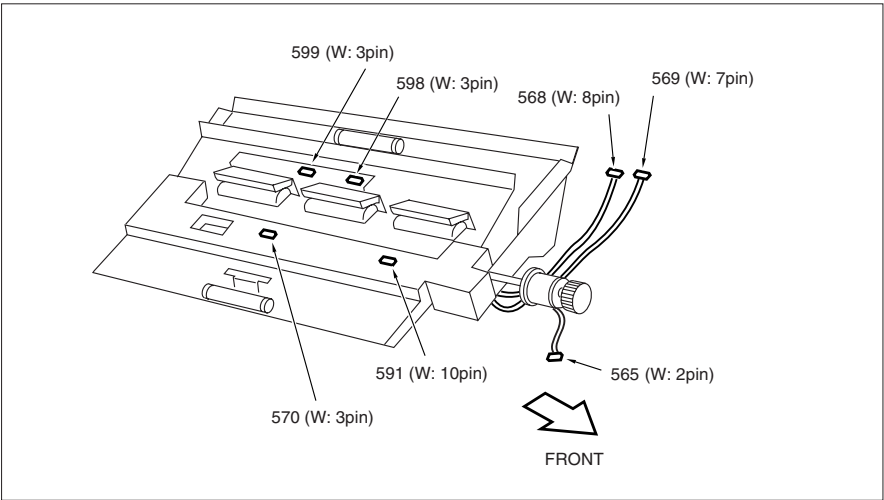
[6] Vertical Conveyance Section



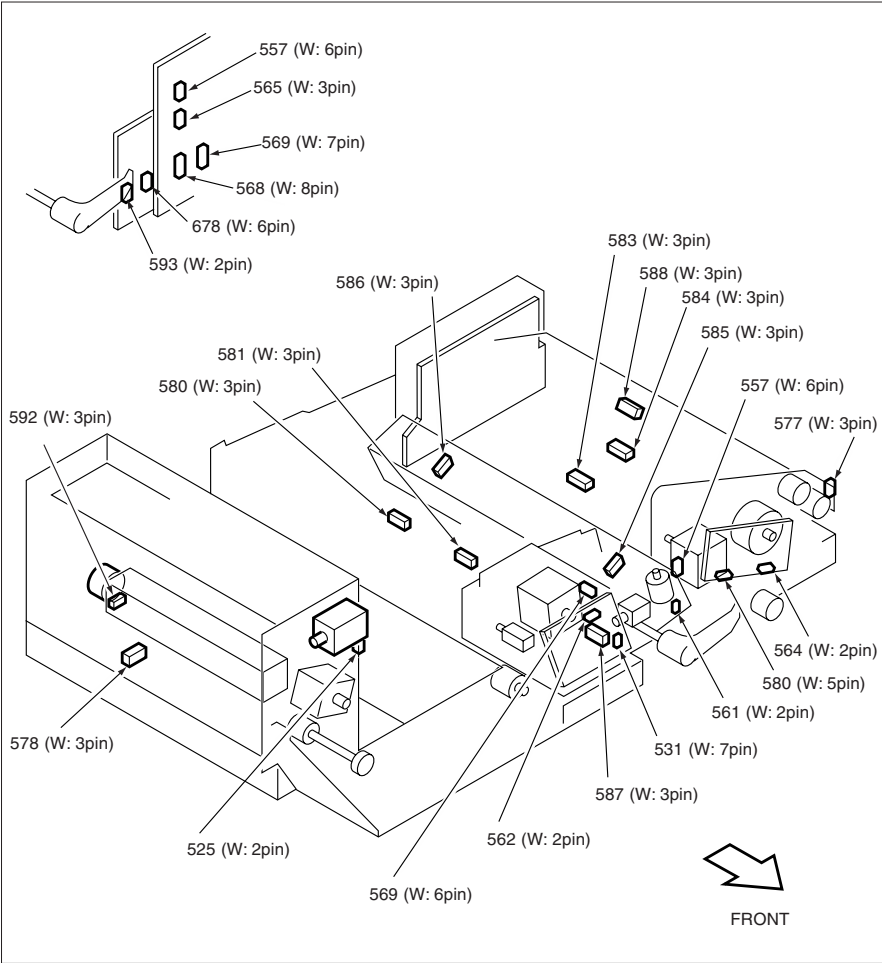
[7] By-pass Feed Section



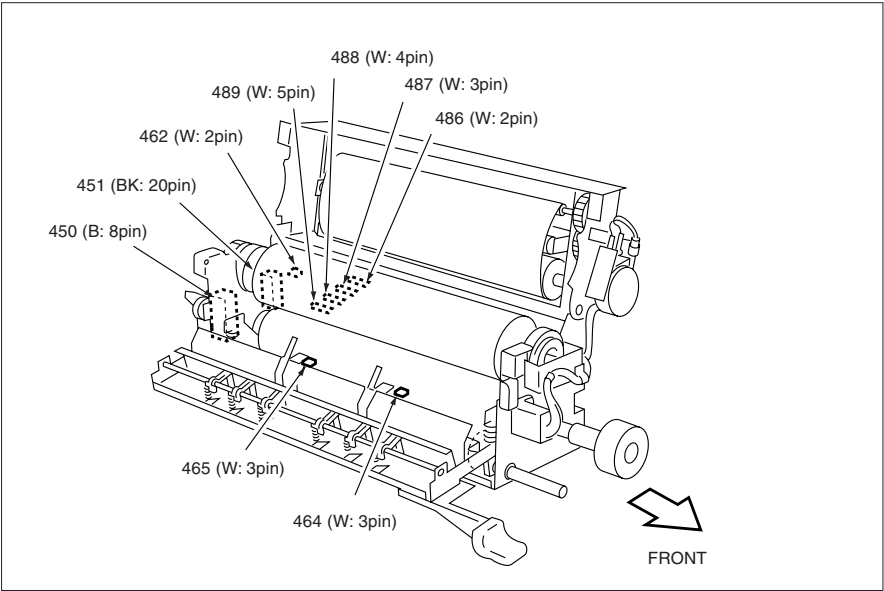
[8] Second Paper Feed Section



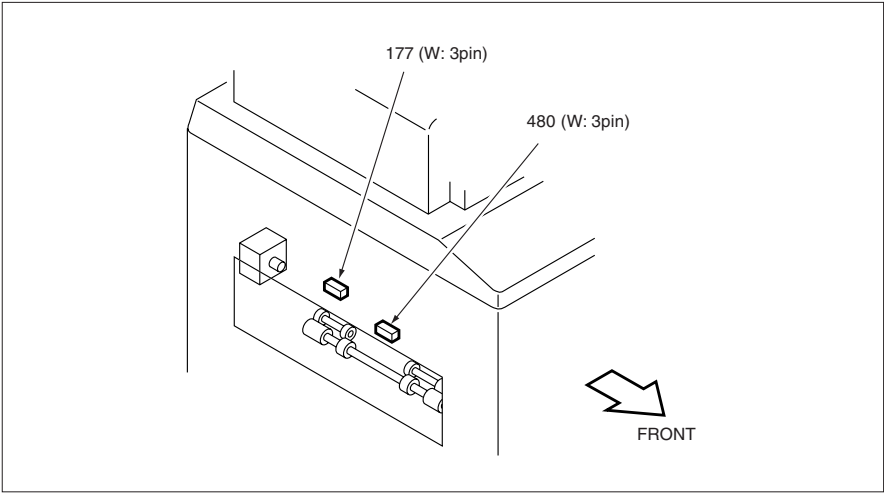
[9] ADU Unit



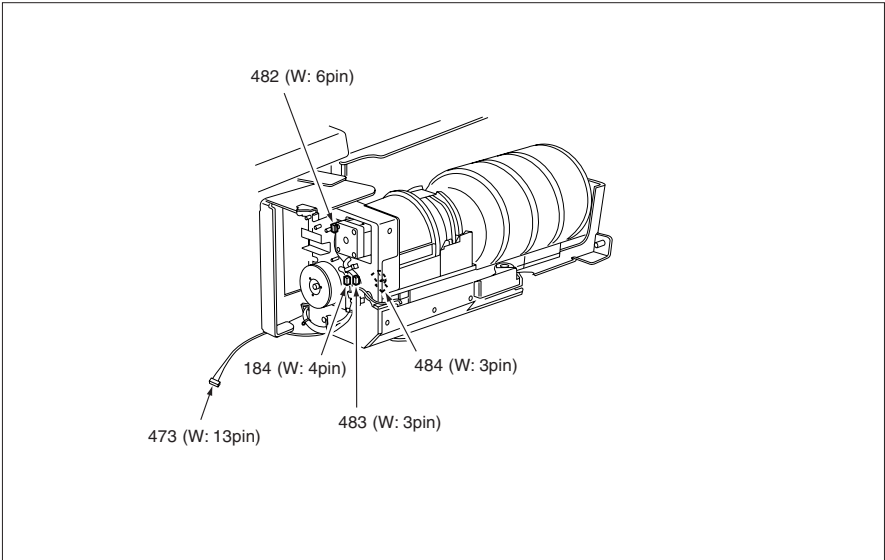
[10] Fixing Unit



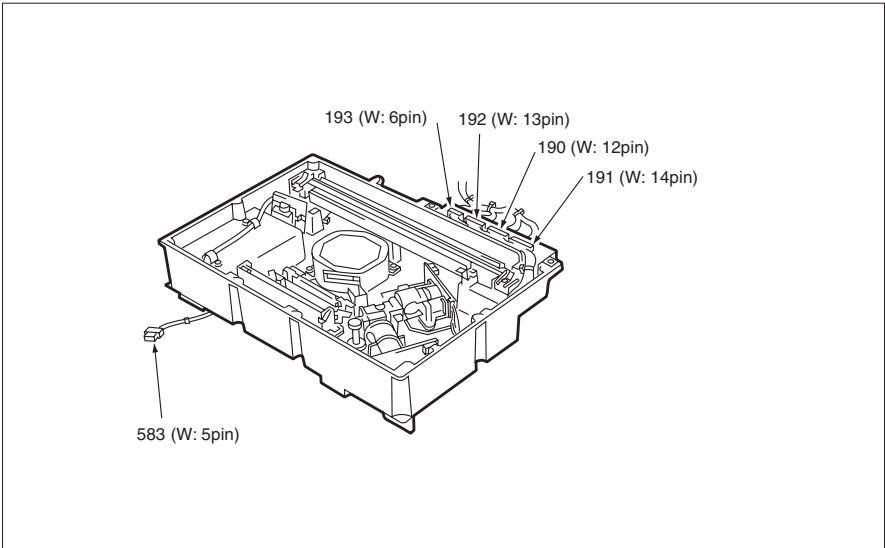
[11] Paper Exit Section



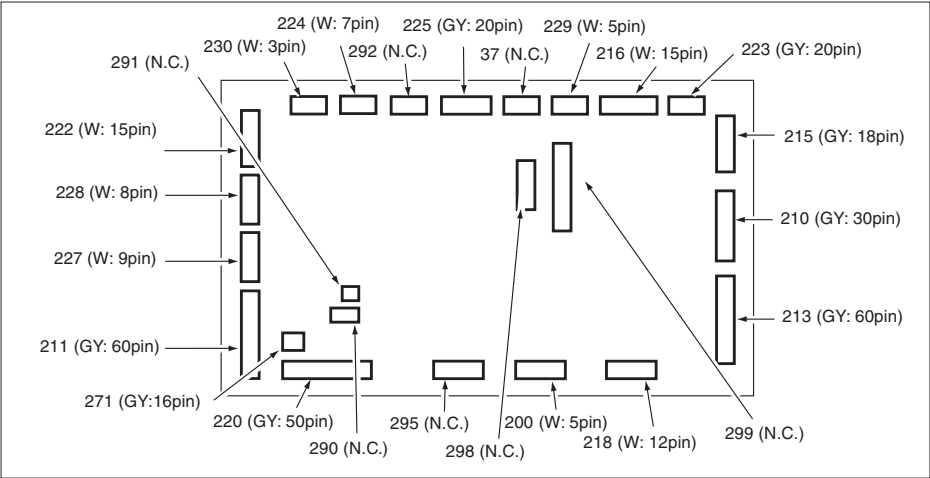
[12] Toner Supply Unit



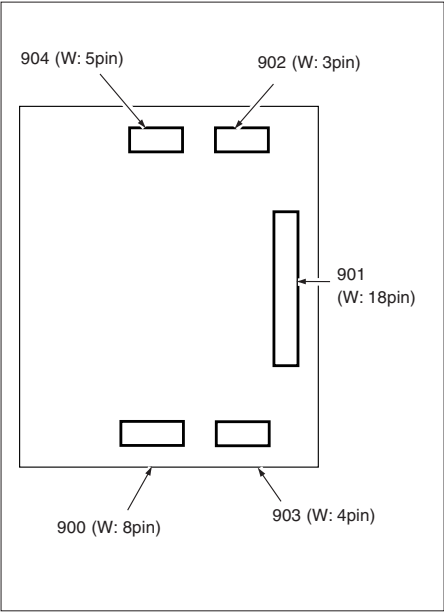
[13] Write Section



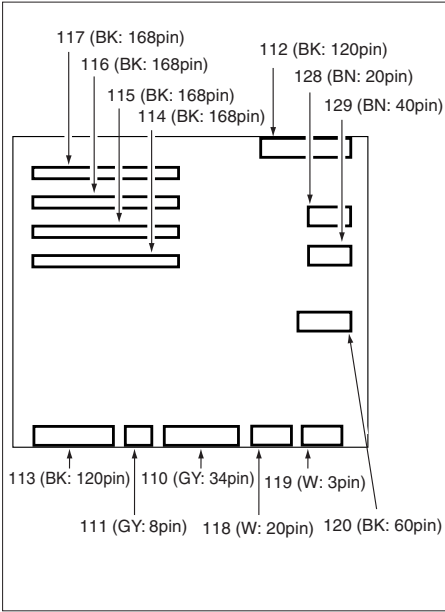
[14] Printer Control Board



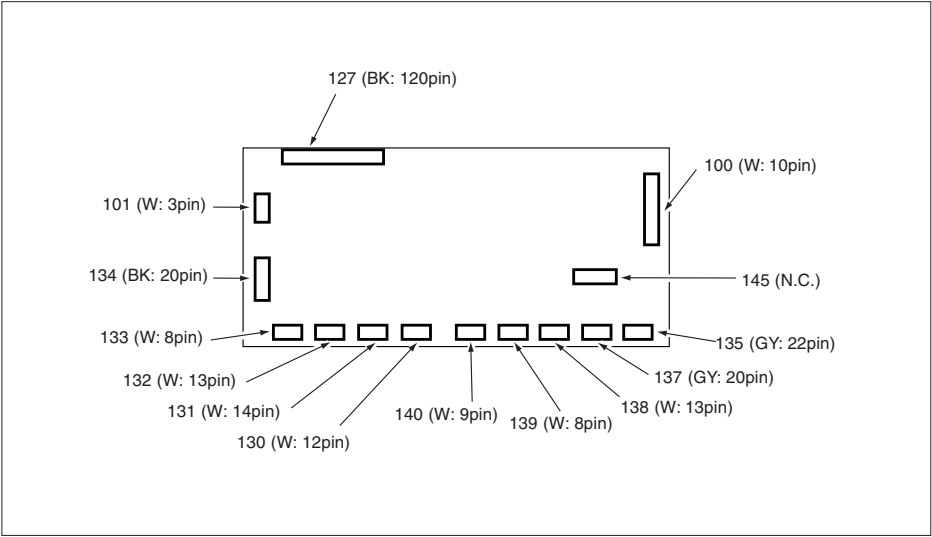
[15] Power Supply Management Board



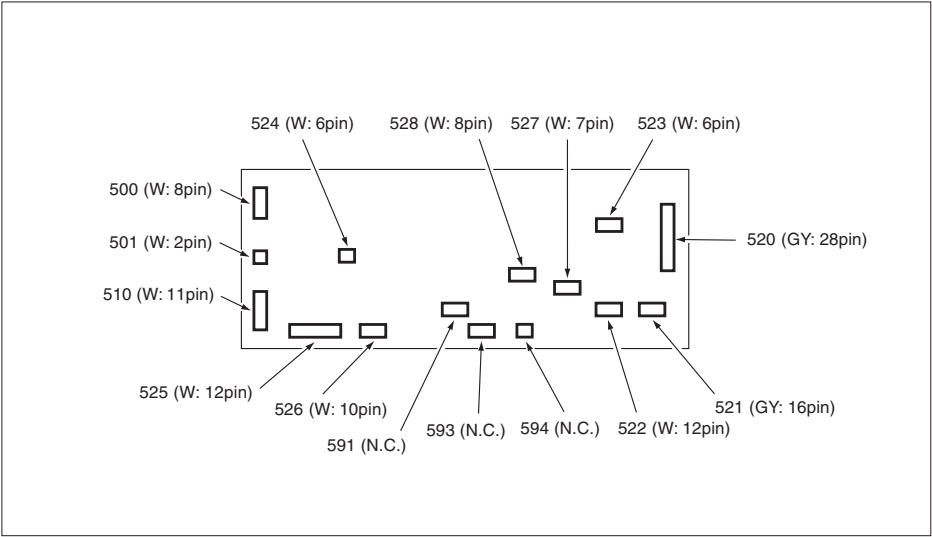
[16] Image Control Board



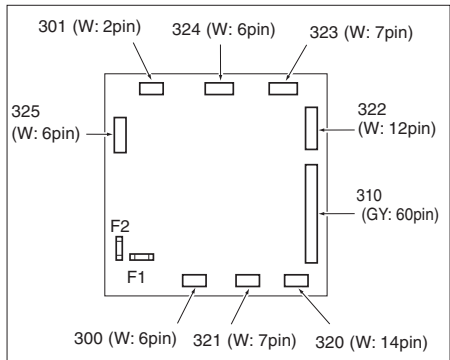
[17] ICB I/F Board



[18] ADU Stand Drive Board

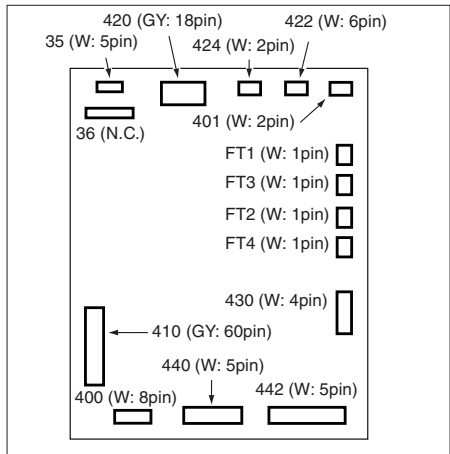


[19] DC Drive Board

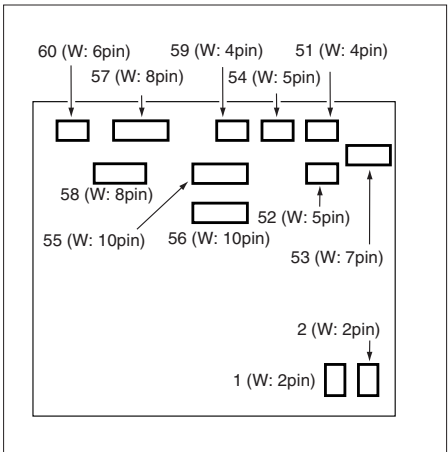


⚠ Caution: Must use fuses specified by Minolta when replacing F1 and F2. If fuses are not specified by Minolta, the safety feature may not work, resulting in burn damage to the board or personal injury.

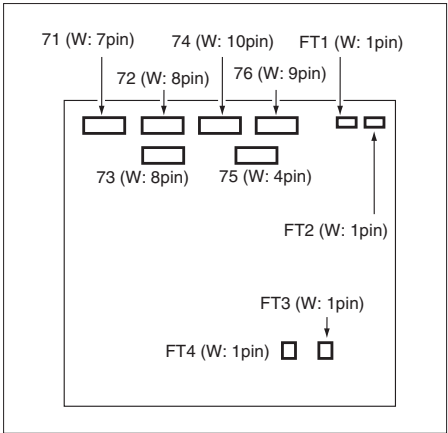
[20] AC Drive Board



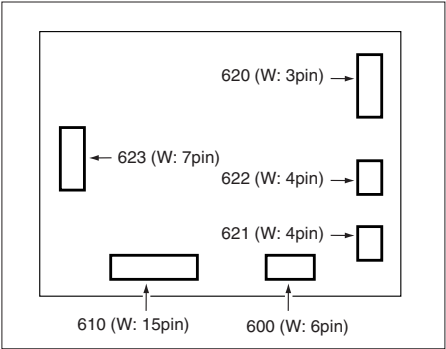
[21] DC Power Supply Unit 1



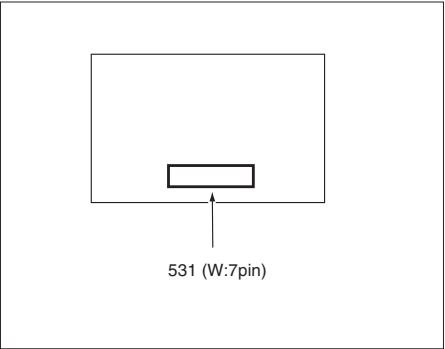
[22] DC Power Supply Unit 2



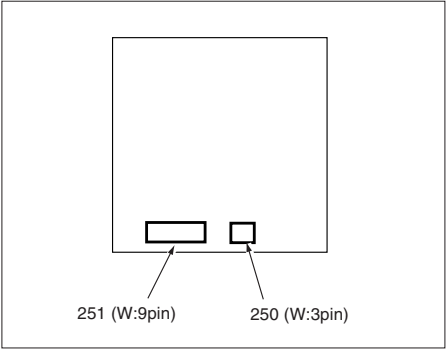
[23] Scanner Drive Board



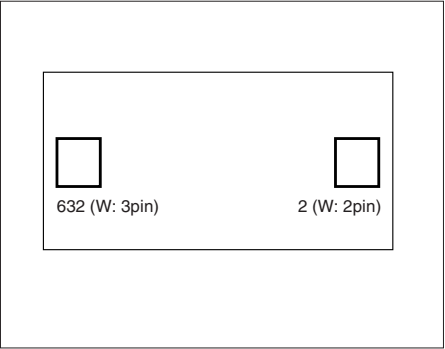
[26] Jam Indicator Board



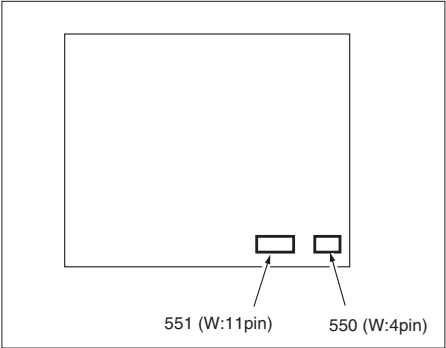
[24] High Voltage Unit 1



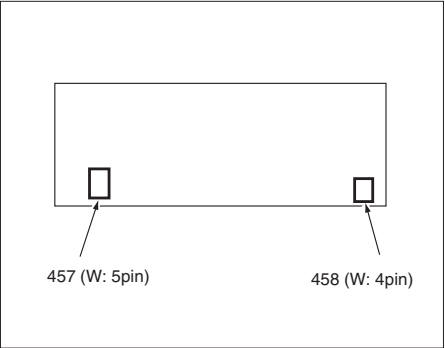
[27] L1 Inverter



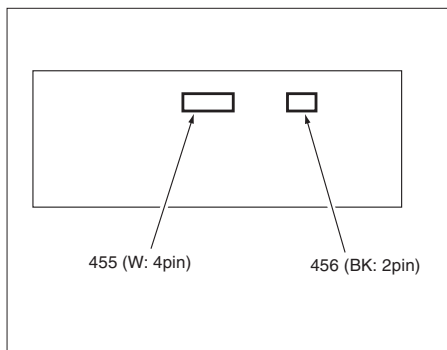
[25] High Voltage Unit 2



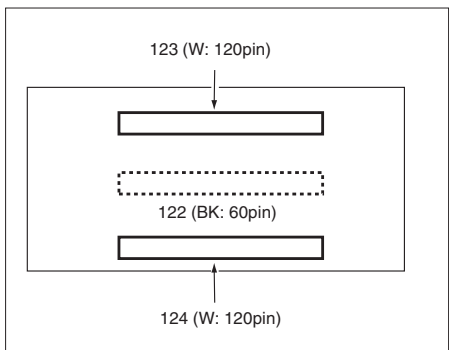
[28] Drum Potential Sensor Board



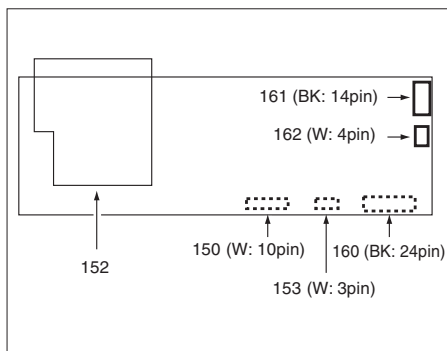
[29] Drum Temperature Sensor Board



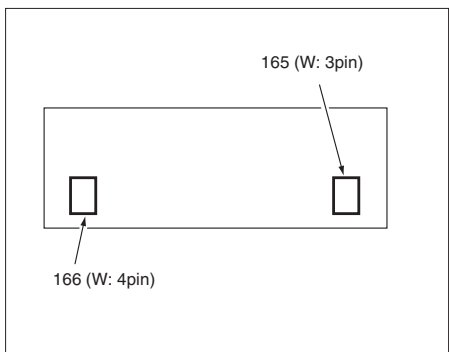
[32] Optional I/F Board



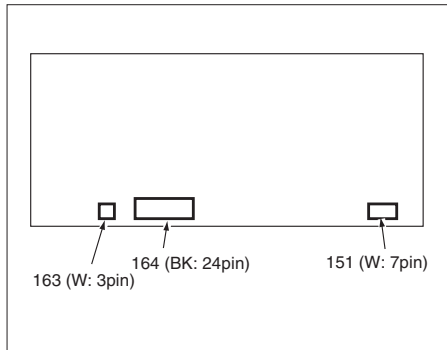
[30] Operation Board 1



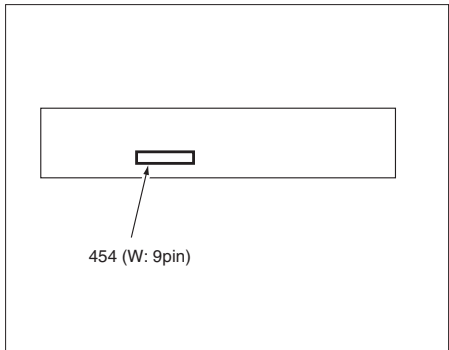
[33] OB Inverter



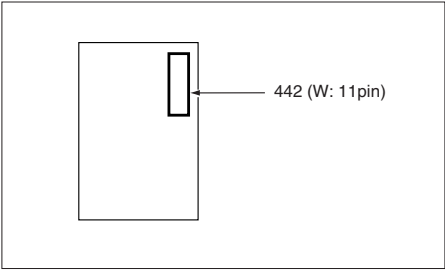
[31] Operation Board 2



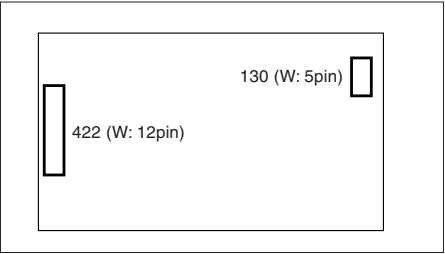
[34] Toner Control Sensor Board



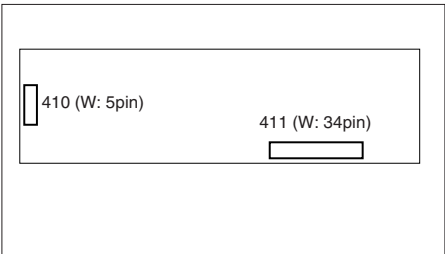
[35] Index Sensor Board



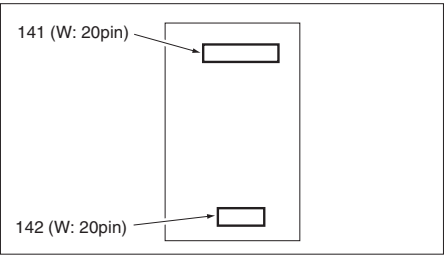
[38] Polygon Motor Drive Board



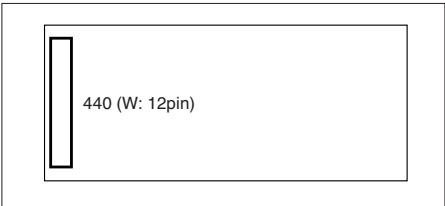
[36] A/D Converter Board



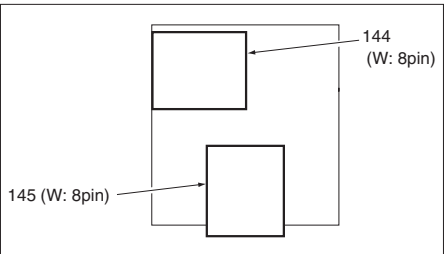
[39] Memory Board



[37] Laser Driver Board 1/2

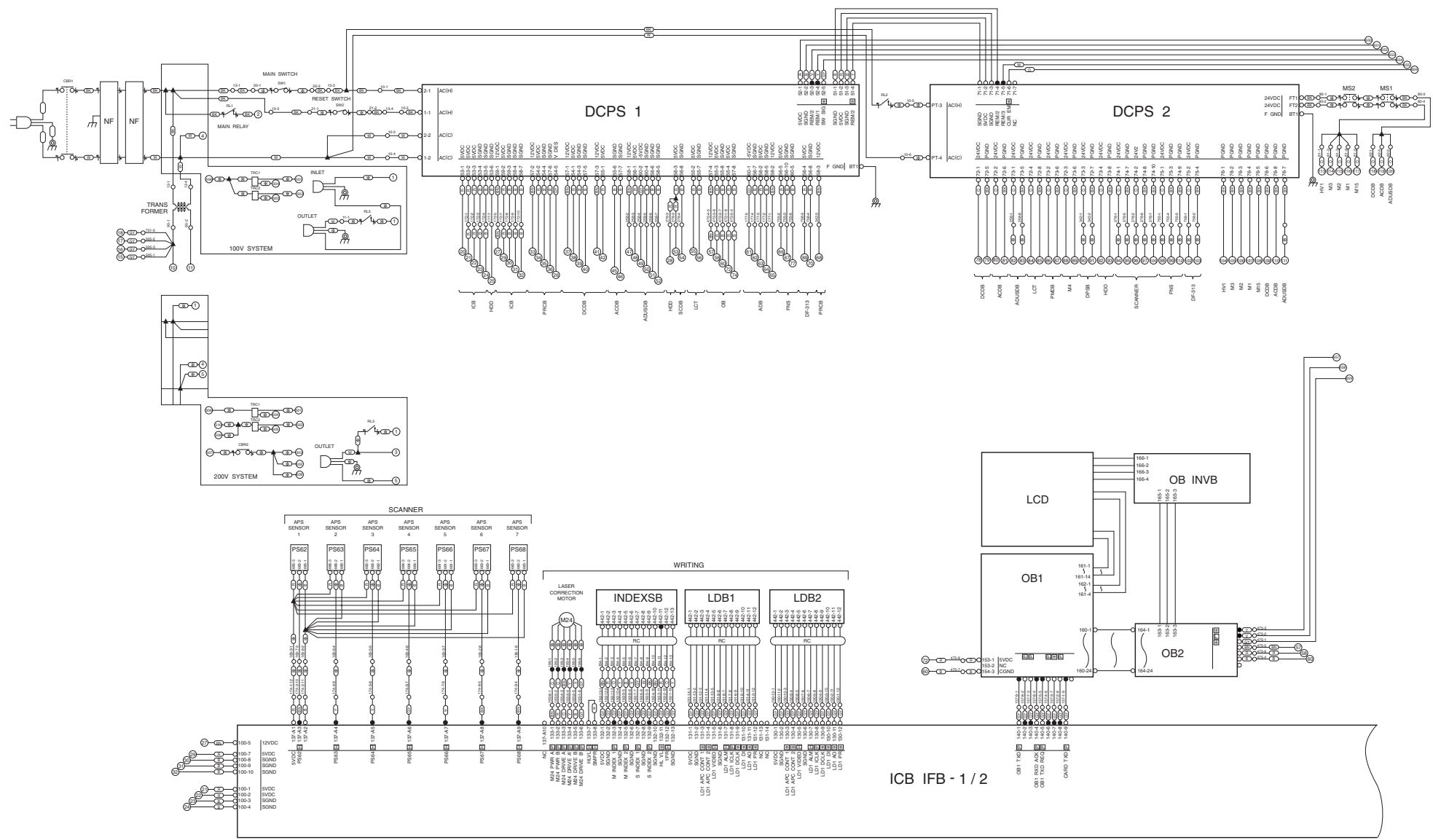


[40] LAN I/F Board

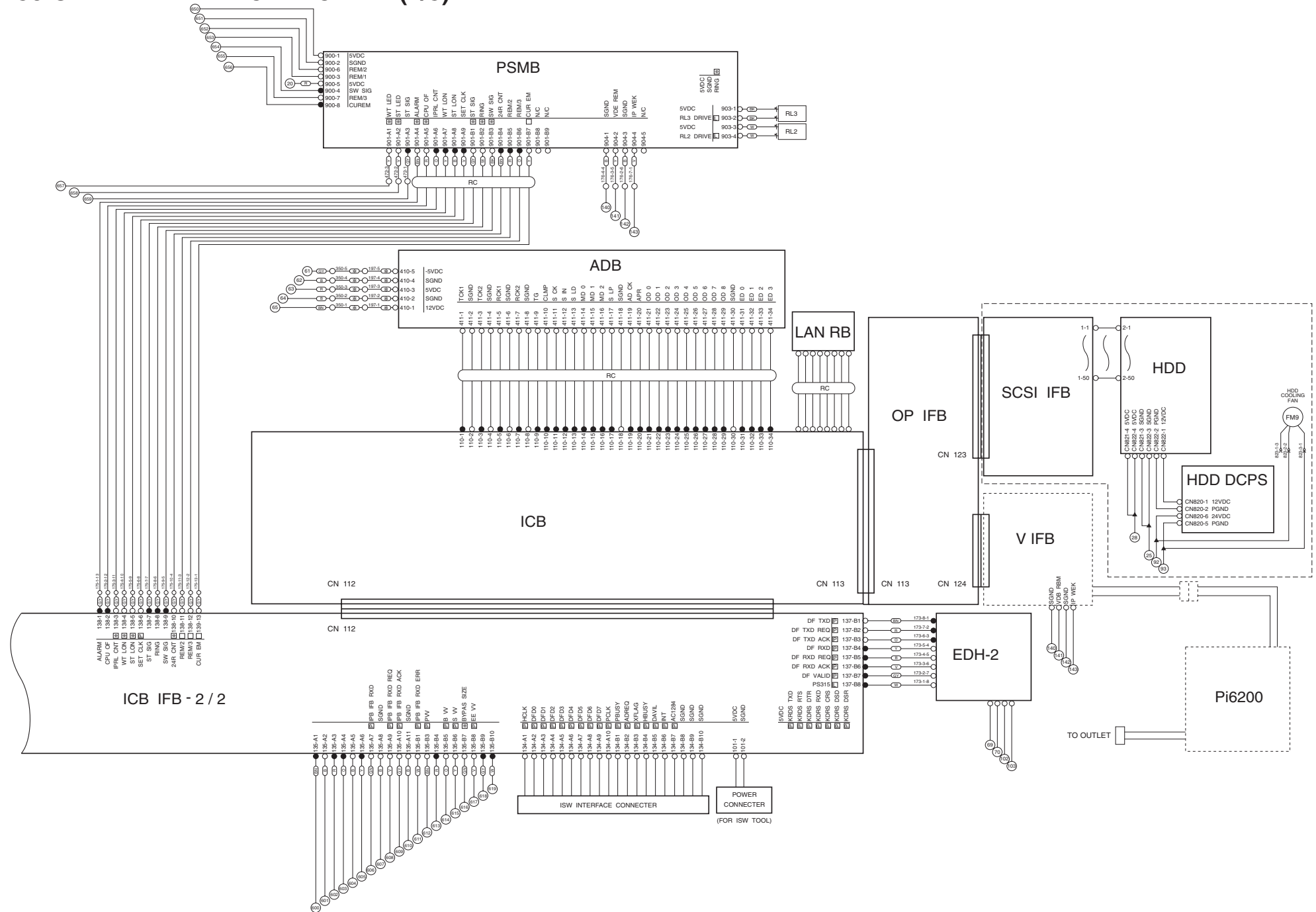


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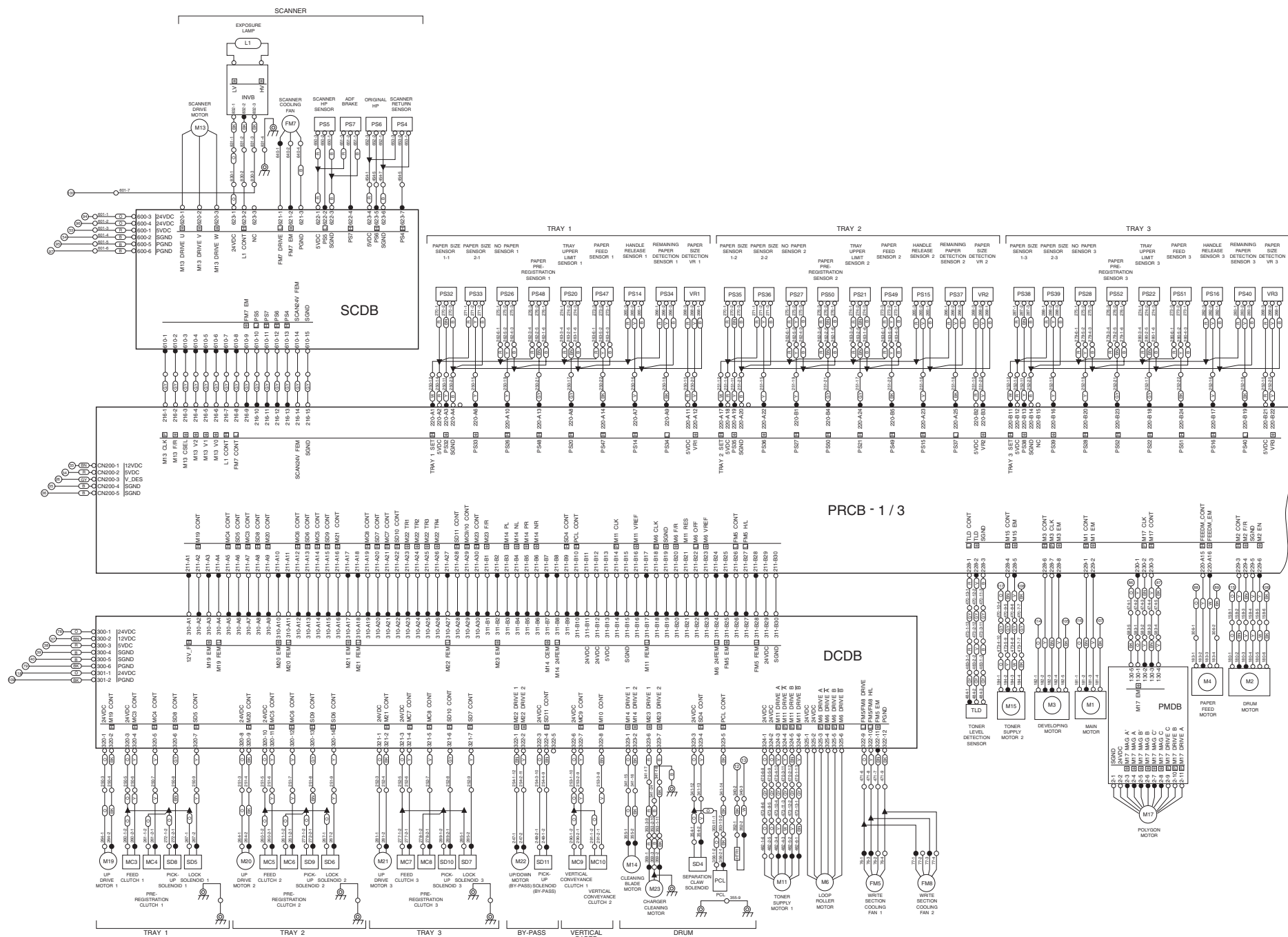
Di750 OVERALL WIRING DIAGRAM (1/5)



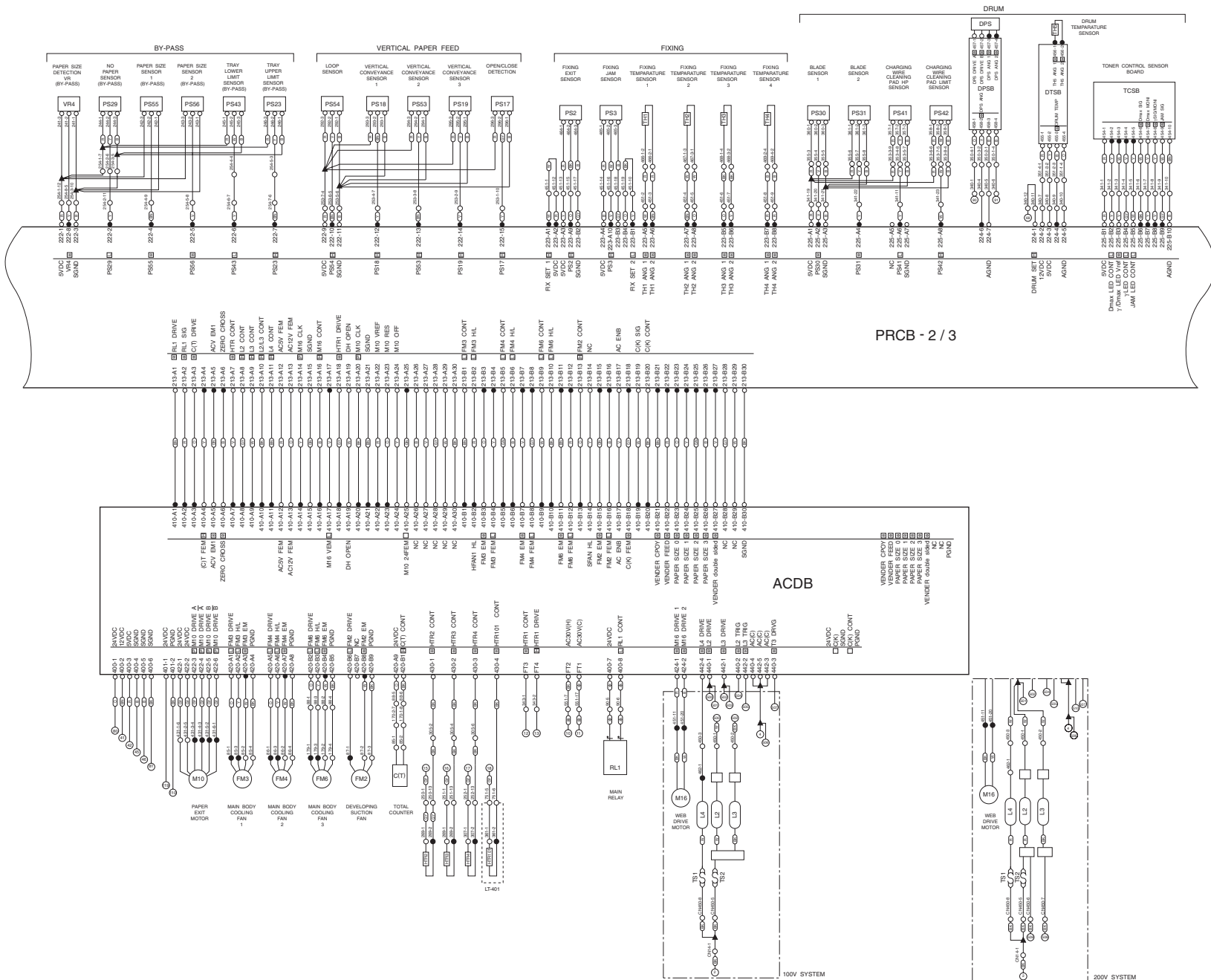
Di750 OVERALL WIRING DIAGRAM (2/5)



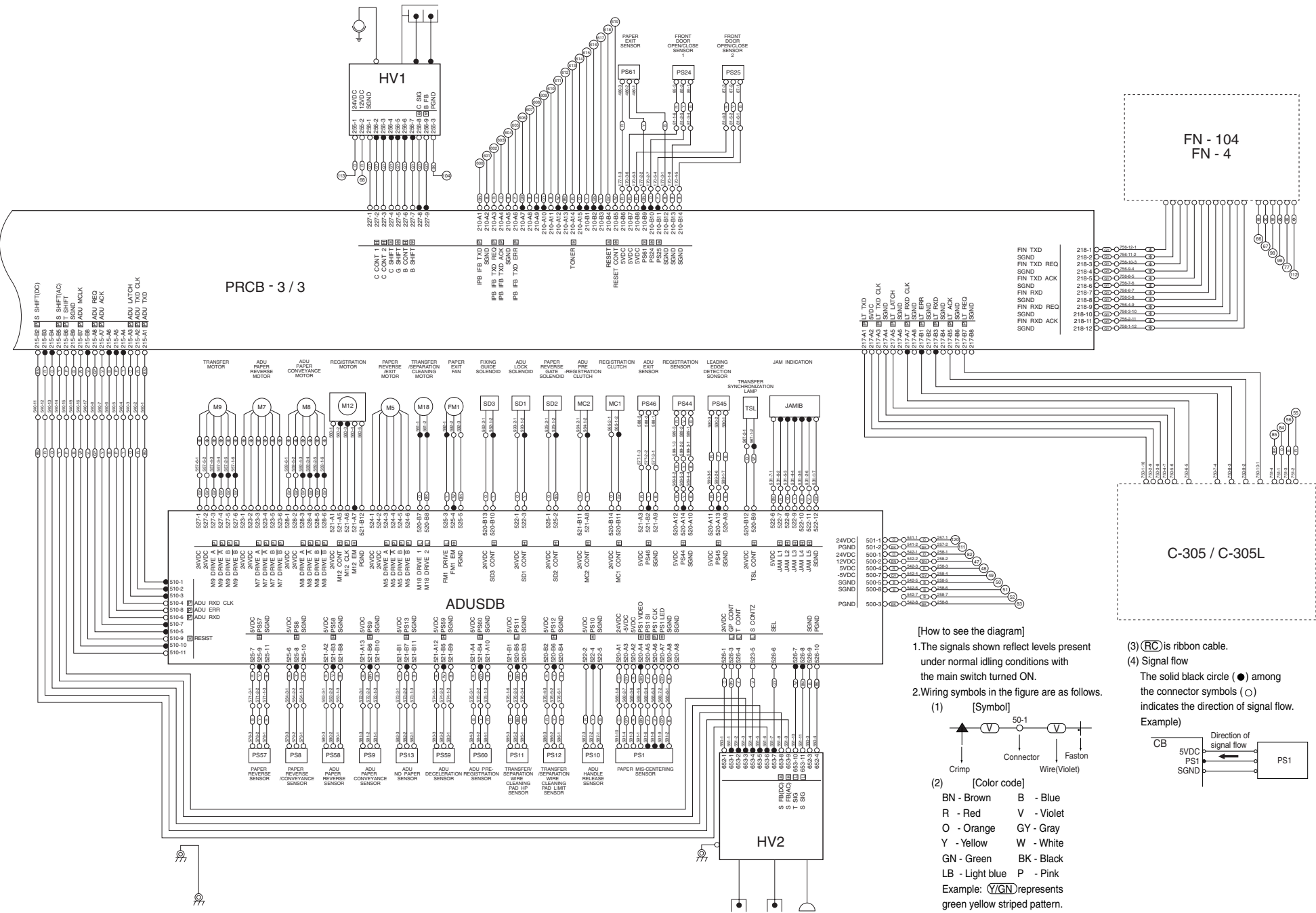
Di750 OVERALL WIRING DIAGRAM (3/5)



Di750 OVERALL WIRING DIAGRAM (4/5)



Di750 OVERALL WIRING DIAGRAM (5/5)



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JAM CODE LIST

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-------------------|----------------|----------|--|--|--|
| Main body and LCT | By-pass tray | J10-1 | PS44 (registration) is not turned ON within the specified time after SD11 (pick up (by-pass)) is in the standby state. | If there is paper in the copy process when this jam occurs, the machine stops after completion of paper ejection. | Remove the original from the bypass tray and remove the jammed paper. |
| | | J10-2 | PS44 (registration) is not turned OFF within the specified time after SD11 (pick up (by-pass)) is turned ON. | | |
| | Tray 1 | J11-1 | PS48 (paper pre-registration 1) is not turned ON within the specified time after MC4 (pre-registration MC 1) is turned ON. | If there is paper in the copy process when this jam occurs, the machine stops after completion of paper ejection. | Remove the tray and remove the jammed paper. |
| | | J11-2 | PS47 (paper feed 1) is not turned ON within the specified time after MC3 (feed MC1) is turned ON. | | |
| | | J11-3 | PS18 (vertical conveyance 1) is ON during idling. | | Open the vertical conveyance door of the main body and remove the jammed paper. |
| | | J11-4 | PS47 (paper feed 1) is ON during idling. | | Open the vertical conveyance door of the main body and remove the jammed paper. Remove the tray and remove the jammed paper. |
| | | J11-5 | PS48 (paper pre-registration 1) is ON during idling. | | |
| | Tray 2 | J12-1 | PS50 (paper pre-registration 2) is not turned ON within the specified time after MC6 (pre-registration MC2) is turned ON. | If there is paper in the copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the vertical conveyance door of the main body and remove the jammed paper. Remove the tray and remove the jammed paper. |
| | | J12-2 | PS49 (paper feed 2) is not turned ON within the specified time after MC5 (feed MC2) is turned ON. | | |
| | | J12-3 | PS19 (vertical conveyance 3) is ON during idling. | | Open the vertical conveyance door of the main body and remove the jammed paper. |
| | | J12-5 | PS49 (feed 2) is ON during idling. | | |
| | | J12-5 | PS50 (paper pre-registration 2) is ON during idling. | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-------------------|---|----------|---|---|--|
| Main body and LCT | Tray 3 | J13-1 | PS52 (paper pre-registration 3) is not turned ON within the specified time after MC8 (pre-registration MC3) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the vertical conveyance door of the main body and remove the jammed paper. |
| | | J13-2 | PS51 (paper feed 3) is not turned ON within the specified time after MC7 (feed MC3) is turned ON. | | Remove the tray and remove the jammed paper. |
| | | J13-3 | PS19 (vertical conveyance 3) is ON during idling. | | Open the vertical conveyance door of the main body and remove the jammed paper. |
| | | J13-4 | PS51 (paper feed 3) is ON during idling. | | Open the vertical conveyance jam door of the main body and remove the jammed paper. |
| | | J13-5 | PS52 (paper pre-registration 3) is ON during idling. | | Remove the tray and remove the jammed paper. |
| | C-305 | J14-1 | PS107 (LT first paper feed detection) is not turned ON within the specified time after MC102 (LT first paper feed MC) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the LCT cover and remove the jammed paper. Open the LCT door and remove the jammed paper. |
| | | J14-2 | PS106 (LT feed detection) is not turned ON within the specified time after MC101 (LT feed drive MC) is turned ON. | | |
| | | J14-3 | PS106 (LT feed detection) is ON during idling. | | |
| | | J14-4 | PS107 (LT first paper feed detection) is ON during idling. | | |
| | Paper feed and conveyance (common to all trays) | J17-1 | PS44 (registration) is not turned ON within the specified time after PS54 (loop) or PS46 (ADU exit) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of copied paper ejection. | Open the right door, draw out the ADU, open the paper registration and loop roller unit jam removal mechanism and jam access guide B, and remove the jammed paper. |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-------------------|---------------------------------------|----------|--|---|--|
| Main body and LCT | Paper feed and conveyance (tray 1) | J17-2 | PS54 (loop) is not turned ON within the specified time after PS47 (paper feed 1) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of copied paper ejection. | Open the vertical paper conveyance jam access door of the main body and the jammed paper. |
| | Paper feed and conveyance (tray 2/3) | J17-3 | PS54 (loop) is not turned ON within the specified time after PS53 (vertical conveyance 2) is turned ON. | | |
| | Paper feed and conveyance (tray 2) | J17-4 | PS53(vertical conveyance 2) is not turned ON within the specified time after PS49 (paper feed 2) is turned ON. | | |
| | Paper feed and conveyance (tray 3) | J17-5 | PS53 (vertical conveyance 2) is not turned ON within the specified time after PS51 (paper feed 3) is turned ON | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the vertical paper conveyance jam access door of the main body and remove the jammed paper. |
| | C-305 | J17-6 | PS54 (loop) is not turned ON within the specified time after PS106 (LT feed detection) is turned ON. | | Open the LCT jam access door and remove the jammed paper. |
| | Paper feed and conveyance | J17-7 | PS45 (leading edge detection) is ON during idling. | | Open the front door, draw out the ADU, and remove the jammed paper. |
| | | J17-8 | PS44 (registration) is ON during idling. | | |
| | | J17-9 | PS46 (ADU exit) is ON during idling. | | |
| | | J17-10 | PS54 (loop) is ON during idling. | | |
| | Vertical paper conveyance access door | J19-1 | The vertical conveyance door or top cover is opened during copying. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the vertical conveyance door of the main body and remove the jammed paper. |
| | C-305 | J19-2 | The jam access door is opened during copying. | | Open the LCT jam access door and remove the jammed paper. |
| | Drum | J21-1 | The drum wrapping paper detection sensor detected paper at the specified timing in the print sequence. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the front right door, draw out the ADU, and remove the jammed paper. |
| | | J21-2 | The drum wrapping paper detection sensor is detecting paper during idling. | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-----------|--|----------|---|--|---|
| Main body | Second paper feed and conveyance | J31-1 | PS45 (leading edge detection) is not turned ON within the specified time after MC1 (Registration) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the front right door, draw out the ADU, and remove the jammed paper. |
| | | J31-2 | PS2 (fixing exit) is not turned ON within the specified time after PS45 (leading edge detection) is turned ON. | | |
| | Fixing unit: paper ejection (straight paper ejection) | J32-1 | PS61 (paper exit) is not turned ON within the specified time after PS2 (fixing exit) is turned ON. | | |
| | Fixing unit: paper exit (paper reverse and exit) (ADU) | J32-2 | PS57 (paper reverse) is not turned ON within the specified time after PS2 (fixing exit) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the front right door, draw out the ADU, and remove the jammed paper. |
| | Fixing unit: paper ejection (paper reverse and eject) | J32-3 | PS57 (paper reverse) is not turned ON again within the specified time after PS57 (paper reverse) is turned ON. | | |
| | | J32-4 | PS61 (paper exit) is not turned ON within the specified time after PS57 (paper reverse) is turned ON again. | | |
| | Fixing unit: Exit conveyance | J32-5 | PS61 (paper exit) is not turned ON within the specified time after PS61 (paper exit) is turned ON. | | |
| | | J32-6 | PS61 (paper exit) is ON during idling. | | |
| | | J32-8 | PS57 (paper reverse) is ON during idling. | | |
| | | J32-9 | PS2 (fixing exit) is ON during idling. | | |
| | | J32-10 | PS8 (paper reverse/conveyance) is ON during idling. | | |
| | | J32-11 | PS3 (fixing jam) is ON during idling. | | |

| | Classification | Jam code | | Cause | Machine response | Countermeasure |
|-------------------|----------------------------------|----------|------------|--|--|---|
| Main body and LCT | Front door | J51-1 | Operating | The front right or left door is opened during copying. | The machine stops immediately. | |
| | ADU inlet paper conveyance | J92-1 | | PS58 (ADU paper reverse) is not turned ON within the specified time after PS57 (paper reverse) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | |
| | | J92-2 | | PS58 (ADU paper reverse) is not turned ON again within the specified time after PS58 (ADU paper reverse) is turned ON. | | |
| | | J92-3 | Stationary | PS58 (ADU paper reverse) is ON during idling. | The machine stops immediately. | |
| | ADU paper reverse and conveyance | J93-1 | Operating | PS59 (ADU deceleration) is not turned ON within the specified time after PS58 (ADU paper reverse) is turned ON. | If there is paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | |
| | | J93-2 | Stationary | PS59 (ADU deceleration) is ON during idling. | | |
| | | J93-3 | | PS9 (ADU paper conveyance) is ON during idling. | | |
| | | J93-4 | | PS8 (paper reverse/ conveyance) is ON during idling. | | |
| | LCT to ADU paper feed | J94-1 | Operating | PS60 (ADU pre-registration) is not turned ON within the specified time after PS59 (ADU deceleration) is turned ON. | If there is a paper in copying process when this jam occurs, the machine stops after completion of paper ejection. | Open the front right door, draw out the ADU, and remove the jammed paper. |
| | | J94-2 | | PS46 (ADU exit) is not turned ON within the specified time after PS60 (ADU pre-registration) is turned ON. | | |
| | | | J94-3 | Stationary | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|------|----------------|----------|--|--|--|
| RADF | EDH-2 | J61-1 | PS301 (RADF open/close detection) is turned OFF during RADF operation. | RADF stops immediately. If there is a paper in or after the copying process, the machine stops after completion of copied paper ejection. | Open the jam access cover and remove jammed paper. |
| | | J61-2 | MS301 (cover open/close) is turned OFF during RADF operation. | | |
| | | J62-1 | PS306 (original registration detection) remains OFF within the specified time after start of prefeed. | | |
| | | J62-2 | PS308 (original conveyance detection) is not turned ON within the specified time after start of prefeed at the front surface of the two-sided original (including one-sided original). | | |
| | | J62-3 | PS308 (original conveyance detection) is not turned ON within the specified time after start of prefeed at the back surface of the two-sided original. | | |
| | | J62-4 | PS308 (original conveyance detection) is not turned OFF within the specified time when M301 (original conveyance roller drive) is rotating in the forward direction. | | |
| | | J62-5 | PS308 (original conveyance detection) is not turned OFF within the specified time when M301 (original conveyance roller drive) is rotating in the backward direction. | | |
| | | J62-6 | When a large-size two-sided original is fed into the reversal section, PS309 (original reversal detection) is not turned ON within the specified time after turning ON of PS308 (original conveyance detection). | | |
| | | J62-7 | When a large-size one-sided original is ejected, PS307 (original exit 1) is not turned ON within the specified time after turning ON of PS308 (original conveyance detection). | | |

JAM CODE LIST

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|------|----------------|----------|--|--|--|
| RADF | EDH-2 | J62-8 | When a large-size two-sided original is ejected, PS307 (original exit 1) is not turned ON within the specified time after turning ON of PS309 (original reversal detection). | RADF stops immediately. If there is a paper in or after the copying process, the machine stops after completion of copied paper ejection. | Open the jam access cover and remove jammed paper. |
| | | J62-9 | When a large-size one-sided original is ejected, PS307 (original exit 1) is not turned OFF within the specified time. | | |
| | | J62-10 | When a large-size two-sided original is ejected, PS307 (original exit 1) is not turned OFF within the specified time. | | |
| | | J63-1 | When a large-size two-sided original is fed out of the reversal section, PS309 (original reversal detection) is not turned ON. | | |
| | | J63-2 | When a large-size two-sided original is fed into the reversal section, PS309 (original reversal detection) is not turned OFF within the specified time. | | |
| | | J63-3 | When a large-size two-sided original is fed out of the reversal section, PS309 (original reversal detection) is not turned OFF within the specified time. | | |
| | | J63-4 | When a small-size one-sided original is ejected, PS314 (original exit 2) is not turned ON within the specified time after turning ON of PS309 (original reversal detection). | | |
| | | J63-5 | When a small-size two-sided original is ejected, PS314 (original exit 2) is not turned ON within the specified time after turning ON of PS313 (original exit reverse detection). | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|------|----------------|----------|--|--|--|
| RADF | EDH-2 | J63-6 | When a small-size one-sided original is ejected, PS314 (original exit 2) is not turned OFF within the specified time. | RADF stops immediately. If there is a paper in or after the copying process, the machine stops after completion of copied paper ejection. | Open the jam access cover and remove jammed paper. |
| | | J63-7 | When a small-size two-sided original is ejected, PS314 (original exit 2) is not turned OFF within the specified time. | | |
| | | J63-8 | When a small-size two-sided original is fed into the reversal section, PS309 (original reversal detection) is not turned ON within the specified time after turning ON of PS308 (original conveyance detection). | | |
| | | J63-9 | When a small-size two-sided original is fed out of the reversal section, PS309 (original reversal detection) is not turned ON. | | |
| | | J63-10 | When a small-size two-sided original is fed into the reversal section, PS309 (original reversal detection) is not turned OFF. | | |
| | | J63-11 | When a small-size two-sided original is fed out of the reversal section, PS309 (original reversal detection) is not turned OFF. | | |
| | | J65-1 | PS306 (original registration detection) is ON during idling. | | |
| | | J65-2 | PS308 (original conveyance detection) is ON during idling. | | |
| | | J65-4 | PS309 (original reversal detection) is ON during idling. | | |
| | | J65-8 | PS307 (original exit 1) is ON during idling. | | |
| | | J65-10 | PS313 (original exit reverse detection) is ON during idling. | | |
| | | | | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|------|-----------------|----------|--|---|--|
| RADF | EDH-2 | J65-20 | PS314(original exit 2) is ON during idling. | RADF stops immediately. If there is a paper in or after the copying process, the machine stops after completion of paper ejection. | Open the movable cover and remove jammed paper. |
| | | J65-40 | PS304(reverse jam detection) is ON during idling. | | |
| | | | Stationary | | |
| FNS | FN-104/FN-4 | J71-1 | The front cover or exit cover is opened during copying. | FNS/main body stops immediately. | Remove jammed paper from FNS/main body if present. |
| | TMG-1 | J71-2 | The front door is opened during copying, or the stacker door is opened during trimmer operation. | | |
| | FN-104/ FN-4 | J72-16 | PS4(FIN entrance passage) is not turned ON within the specific time after the main body paper exit PS is turned ON. | | |
| | | J72-17 | PS10(paper exit 2) is not turned ON within the specific time after PS4(FIN entrance passage) is turned ON. | | |
| | | J72-18 | PS5(stacker conveyance passage) is not turned ON within the specific time after PS4(FIN entrance passage) is turned ON (in staple mode). | | |
| | | J72-19 | PS5(stacker conveyance passage) is not turned OFF within the specific time after it turns ON. | | |
| | | J72-20 | PS6(paper exit 1) is not turned ON within the specific time after the paper exit operation is started (in staple mode). | | |
| | | J72-21 | PS6(paper exit 1) is not turned OFF within the specific time after it turns ON after the paper exit operation is started (in staple mode). | | |
| | | J72-22 | PS1(subtray paper exit) is not turned ON within the specific time after PS4(FIN entrance passage) is turned ON (in subtray paper exit). | | |
| | | J72-23 | PS1(subtray paper exit) is not turned OFF within the specific time after it turns ON (in subtray paper exit). | | |
| | | J72-24 | PS28(folding passage/1) is not turned ON within the specific time after the staple is completed. | | |
| | | | Operating | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-----|---------------------|----------|---|----------------------------------|--|
| FNS | FN-104/ FN-4 | J72-25 | PS25(folding paper exit) is not turned ON within the specific time after folding is completed. | FNS/main body stops immediately. | Remove jammed paper from FNS/main body if present. |
| | | J72-26 | PS25(folding paper exit) is not turned OFF within the specific time after it turns ON. | | |
| | | J72-27 | PS20(stacker no paper detection) is OFF when the staple is started. | | |
| | | J72-28 | PS5(stacker conveyance passage) is not turned OFF within the specific time after it turns ON. | | |
| | | J72-29 | PS10(paper exit 2) is not turned OFF within the specific time after it turns ON. | | |
| | | J72-30 | PS6(paper exit 1) is not turned OFF within the specific time after it turns ON. | | |
| | TMG-1 | J72-32 | PS101(entrance) is not turned ON within the specific time after PS25(folding paper exit) turns ON. | | |
| | | J72-33 | PS102(conveyance) is not turned ON within the specific time after PS101(entrance) turns ON. | | |
| | | J72-34 | The paper has not pass the PS108(exit) within the specific time after M101(conveyance) turns ON. | | |
| | Cover Insertor A | J72-35 | PS201(sheet passage) is not turned ON within the specific time after MC201(paper feed) is turned ON. | | |
| | | J72-36 | PS5(stacker conveyance passage) is not turned ON within the specific time after PS201(sheet passage) is turned ON. | | |
| | | J72-37 | PS10(paper exit 2) is not turned ON within the specific time after PS201(sheet passage) is turned ON. | | |
| | FN-104/ FN-4 | J72-81 | PS30(clincher HP/R) and PS31 (stapler HP/R) are not turned ON within the specific time after M21 (clincher R) and M22(stapler R) go ON. | | |
| | | J72-82 | PS33(clincher HP/F) and PS34 (stapler HP/F) are not turned ON within the specific time after M23 (clincher F) and M24(stapler F) go ON. | | |

| | Classification | Jam code | Cause | Machine response | Countermeasure |
|-----|---------------------|----------|--|----------------------------------|---|
| FNS | FN-104/ FN-4 | J72-83 | PS30(clincher HP/R), PS33 (clincher HP/F), PS31(stapler HP/R) and PS34(stapler HP/F) are not turned ON within the specific time after M21(clincher R), M23(clincher/F), M22(stapler R) and M24(stapler/F) go ON. | FNS/main body stops immediately. | Remove jammed paper from FNS/ main body if present. |
| | | J72-90 | FNS does not stop within the specific time after it receives start-operation signal from the main body. | | |
| | | J73-1 | PS6(paper exit 1) is ON during idling. | | |
| | | J73-2 | PS5(stacker conveyance passage) is ON during idling. | | |
| | | J73-3 | PS26(folding passage/2) is ON during idling. | | |
| | | J73-4 | PS13(entrance paper detection) is ON during idling. | | |
| | | J73-5 | PS4(FIN entrance passage) is ON during idling. | | |
| | | J73-6 | PS10(paper exit 2) is ON during idling. | | |
| | | J73-7 | PS1(subtray paper exit) is ON during idling. | | |
| | | J73-9 | PS28(folding passage/1) is ON during idling. | | |
| | | J73-10 | PS25(folding paper exit) is ON during idling. | | |
| | TMG-1 | J73-11 | PS101(entrance) is ON during idling. | | |
| | | J73-12 | PS102(conveyance) is ON during idling. | | |
| | | J73-13 | PS108(exit) is ON during idling. | | |
| | Cover Insertor A | J73-14 | PS201(sheet passage) is ON during idling. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|----------------|--------------|--|---|--|
| Main body | Drive | F13-01 | A trouble detection signal is detected two consecutive times (the first signal is ignored) in 4 seconds after turning ON of M4 (paper feed). | The machine stops immediately and RL1 (main) is turned OFF. | M4 (paper feed) PRCB (printer control board) |
| | | F13-02 | A trouble detection signal is detected two consecutive times (the first signal is ignored) in 2 seconds after turning ON of M101 (LT paper feed). | | M101 (LT paper feed) LTDB (LT drive board) |
| | | F13-03 | An M6 trouble detection signal (blown fuse) is detected when M6 (loop roller) is ON. | If there is a paper in copying process when this trouble occurs, the machine stops after completion of copied paper ejection. RL1 (main) is turned OFF. | M6 (loop roller) DCDB (DC drive board) |
| | Tray 1 | F18-10 | An M19 trouble detection signal is detected when M19 (up drive 1) is ON. | The machine stops immediately and RL1 (main) is turned OFF. Error code is not displayed on operation panel. It is displayed only on data collection, list output. Message "Please load paper in tray 1." is displayed on operation panel because tray has not completed ascending. | M19 (up drive 1) DCDB (DC drive board) PRCB (printer control board) PS20 (tray upper limit 1) |
| | | F18-11 | PS20 (tray upper limit 1) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M19 (up drive 1). At this time, a trouble detection signal (24V off) is detected. | | |
| | | F18-12 | PS20 (tray upper limit 1) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M19 (up drive 1). At this time, a trouble detection signal (blown fuse) is detected. | | |
| | | F18-13 | PS20 (tray upper limit 1) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M19 (up drive 1). At this time, no trouble detection signal is detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|----------------|--------------|--|---|--|
| Main body | Tray 2 | F18-20 | When M20 (up drive 2) is ON, an M20 error detection signal is detected. | The machine stops immediately and RL1 (main) is turned OFF. Error code is not displayed on operation panel. It is displayed only on data collection, list output. Message "Please load paper in tray 2." is displayed on operation panel because tray has not completed ascending. | M20 (up drive 2) DCDB (DC drive board) PRCB (printer control board) PS21 (tray upper limit 2) |
| | | F18-21 | PS21 (tray upper limit 2) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M20 (up drive 2). At this time, a trouble detection signal (24V off) is detected. | | |
| | | F18-22 | PS21 (tray upper limit 2) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M20 (up drive 2). At this time, a trouble detection signal (blown fuse) is detected. | | |
| | | F18-23 | PS21 (tray upper limit 2) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M20 (up drive 2). At this time, no trouble detection signal is detected. | | |
| | Tray 3 | F18-30 | When M21 (up drive 3) is ON, an M21 trouble detection signal is detected. | The machine stops immediately and RL1 (main) is turned OFF. Error code is not displayed on operation panel. It is displayed only on data collection, list output. Message "Please load paper in tray 3" is displayed on operation panel because tray has not completed ascending. | M21 (up drive 3) DCDB (DC drive board) PRCB (printer control board) PS22 (tray upper limit 3) |
| | | F18-31 | PS22 (tray upper limit 3) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M21 (up drive 3). At this time, a trouble detection signal (24V off) is detected. | | |
| | | F18-32 | PS22 (tray upper limit 3) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M21 (up drive 3). At this time, a trouble detection signal (blown fuse) is detected. | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|----------------|--------------|--|---|--|
| Main body | Tray 3 | F18-33 | PS22 (tray upper limit 3) which has been OFF is not turned ON within 10 seconds of upward movement started by turning ON of M21 (up drive 3). At this time, no trouble detection signal is detected. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. Message "Please load paper in tray 3" is displayed on operation panel because tray has not completed ascending. | M21 (up drive 3) DCDB (DC drive board) PRCB (printer control board) PS22 (tray upper limit detection) |
| | LCT | F18-40 | When M100 (LT up/down) is ON, an M100 abnormal detection signal has been continuously detected for one second. | The machine stops immediately and RL1 (main) is turned OFF. | M100 (LT up/down) LTDB (LT drive board) |
| LCT | | F18-41 | PS109 (LT upper limit detection) or PS101 (LT lower limit detection) which has been OFF is not turned ON within 35 seconds of upward or downward movement started by turning ON of M100 (LT up/down). At this time, an abnormal detection signal (24V off) is detected. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. Message "Please load paper in tray 4" is displayed on operation panel because tray has not completed ascending. | PS101 (LT lower limit detection) PS109 (LT upper limit detection) |
| | | F18-42 | PS109 (LT upper limit detection) or PS101 (LT lower limit detection) which has been OFF is not turned ON within 35 seconds of upward or downward movement started by turning ON of M100 (LT up/down drive). At this time, an abnormal detection signal (blown fuse) is detected. | | |
| | | F18-43 | PS109 (LT upper limit detection) or PS101 (LT lower limit detection) which has been OFF is not turned ON within 35 seconds of upward or downward movement started by turning ON of M100 (LT up/down drive). At this time, no abnormal detection signal is detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|----------------|--------------|--|---|--|
| Main body | By-pass tray | F18-51 | PS23 (tray upper limit (by-pass)) or PS43 (tray lower limit (by-pass)) which has been OFF is not turned ON within 10 seconds of upward or downward movement started by turning ON of M22 (up/down (by-pass)). At this time, a trouble detection signal (24V off) is detected. | Operation panel displays jam error (J10-01). It is reset by paper re-load. Error code is displayed on data collection, list output. | M22 (up/down (by-pass)) DCDB (DC drive board) PRCB (printer control board) PS23 (tray upper limit (by-pass)) PS43 (tray lower limit (by-pass)) |
| | | F18-52 | PS23 (tray upper limit (by-pass)) or PS43 (tray lower limit (by-pass)) which has been OFF is not turned ON within 10 seconds of upward or downward movement started by turning ON of M22 (up/down (by-pass)). At this time, a trouble detection signal (blown fuse) is detected. | | |
| | | F18-53 | PS23 (tray upper limit (by-pass)) or PS43 (tray lower limit (by-pass)) which has been OFF is not turned ON within 10 seconds of upward or downward movement started by turning ON of M22 (up/down (by-pass)). At this time, no trouble detection signal is detected. | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|--|---|--|
| Main body | Wire cleaning abnormality | F21-01 | <ul style="list-style-type: none"> • When SW1 (main switch) has been ON and PS41 (charging wire cleaning pad HP) has been OFF, PS41 is not turned ON within 35 seconds of home position search operation (forward) started by turning ON of M23 (charger cleaning). At this time, a trouble detection signal (blown fuse) is not detected. • PS41 is not turned OFF within 15 seconds after start of reversal operation (return). At this time, a trouble detection signal (blown fuse) is not detected. • PS42 (charging wire cleaning pad limit) is not turned ON within 35 seconds after detection of turning OFF of PS41 (charging wire cleaning pad HP) at the start of reversal operation (return), or PS41 is not turned ON within 35 seconds after turning ON of PS42. At this time, a trouble detection signal (blown fuse) is not detected. | The machine stops immediately and RL1 (main) is turned OFF. | M23 (charger cleaning) DCDB (DC drive board) PRCB (printer control board) PS41 (charging wire cleaning pad HP) PS42 (charging wire cleaning pad limit) |
| | | F21-02 | <ul style="list-style-type: none"> • When SW1 (main switch) has been ON and PS41 (charging wire cleaning pad HP) has been OFF, PS41 is not turned ON within 35 seconds of home position search operation (forward) started by turning ON of M23 (charger cleaning). At this time, a trouble detection signal (blown fuse) is detected. • PS41 is not turned OFF within 15 seconds after start of reversal operation (return). At this time, a trouble detection signal (blown fuse) is detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|--|---|--|
| Main body | Wire cleaning abnormality | F21-02 | <ul style="list-style-type: none"> PS42 (charging wire cleaning pad limit) is not turned ON within 35 seconds after detection of turning OFF of PS41 (charging wire cleaning pad HP) at the start of reversal operation (return), or PS41 is not turned ON within 35 seconds after turning ON of PS42. At this time, a trouble detection signal (blown fuse) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | M23 (charger cleaning) DCDB (DC drive board) PRCB (printer control board) PS41 (charging wire cleaning pad HP) PS42 (charging wire cleaning pad limit) |
| | | F21-03 | A motor lock signal is detected during the cleaning pad moving from the PS42 (charging wire cleaning pad limit) side to the PS41 (charging wire cleaning pad HP) side. After retry, the fifth motor lock signal is detected. | | M23 (charger cleaning) DCDB (DC drive board) PRCB (printer control board) PS41 (charging wire cleaning pad HP) PS42 (charging wire cleaning pad limit) |
| | | F21-04 | <ul style="list-style-type: none"> When SW1 (main switch) has been ON and PS11 (transfer/separation wire cleaning pad HP) has been OFF, PS11 is not turned ON within 40 seconds of home position search operation (return) started by turning ON of M18 (transfer/separation cleaning). At this time, a trouble detection signal (blown fuse) is not detected. PS11 is not turned OFF within 15 seconds after start of reversal operation (return). At this time, a trouble detection signal (blown fuse) is not detected. PS12 (transfer/separation wire cleaning pad limit) is not turned ON within 40 seconds after detection of turning OFF of PS11 (transfer/separation wire cleaning pad HP) at the start of reversal operation (return), or PS11 is not turned ON within 40 seconds after turning ON of PS12. At this time, a trouble detection signal (blown fuse) is not detected. | | M18 (transfer/separation cleaning) ADUSDB (ADU stand drive board) PS12 (transfer/separation wire cleaning pad limit) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|--|---|---|
| Main body | Wire cleaning abnormality | F21-05 | <ul style="list-style-type: none"> When SW1 (main switch) has been ON and PS11 (transfer/separation wire cleaning pad HP) has been OFF, PS11 is not turned ON within 40 seconds of home position search operation (return) started by turning ON of M18 (transfer/separation cleaning). At this time, a trouble detection signal (blown fuse) is detected. PS11 is not turned OFF within 15 seconds after start of reversal operation (return). At this time, a trouble detection signal (blown fuse) is detected. PS12 (transfer/separation wire cleaning pad limit) is not turned ON within 40 seconds after detection of turning OFF of PS11 (transfer/separation wire cleaning pad HP) at the start of reversal operation (return), or PS11 is not turned ON within 40 seconds after turning ON of PS12. At this time, a trouble detection signal (blown fuse) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | M18 (transfer/separation cleaning) ADUSDB (ADU stand drive board) PS11 (transfer/separation wire cleaning pad HP) PS12 (transfer/separation wire cleaning pad limit) |
| | | F21-06 | A motor lock signal is detected during movement from the PS12 (transfer/separation wire cleaning pad limit) side to the PS11 (transfer/separation wire cleaning pad HP) side. After retry, the fifth motor lock signal is detected. | | M18 (transfer/separation cleaning) ADUSDB (ADU stand drive board) PS11 (transfer/separation wire cleaning pad HP) PS12 (transfer/separation wire cleaning pad limit) |
| | Motor abnormality | F23-01 | A trouble detection signal is detected two consecutive times (the first signal is ignored) in 7 seconds after turning ON of M15 (toner supply 2). | | M15 (toner supply 2) PRCB (printer control board) |
| | | F23-02 | Because a trouble detection signal had been detected one second after turning ON of M3 (developing), M3 was turned OFF for 0.5 second and ON again. One second later, a trouble detection signal was detected again. | | M3 (developing) PRCB (printer control board) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-------------------|--------------|--|---|---|
| Main body | Motor abnormality | F23-03 | An M14 (cleaning blade) trouble detection signal (excessive current) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | M2 (drum) M14 (blade) DCDB (DC drive board) PRCB (printer control board) PS30 (blade 1) PS31 (blade 2) |
| | | F23-04 | The drum READY1 signal (ready) is not detected within 4 seconds after turning ON of M2 (drum drive motor), or the drum READY1 signal (not ready) is not detected within 4 seconds after turning OFF of M2. At this time, a trouble detection signal (24V off) is detected. | | |
| | | F23-05 | The drum READY1 signal (ready) is not detected within 4 seconds after turning ON of M2 (drum), or the drum READY1 signal (not ready) is not detected within 4 seconds after turning OFF of M2. At this time, an M14 (cleaning blade) trouble detection signal (blown fuse) is detected. | | |
| | | F23-06 | The drum READY1 signal (ready) is not detected within 4 seconds after turning ON of M2 (drum), or the drum READY1 signal (not ready) is not detected within 4 seconds after turning OFF of M2. At this time, no trouble detection signal is detected. | | |
| | | F23-07 | The blade READY signal (ready) is not detected within 5 seconds after turning ON of the blade replacement signal, or the blade READY signal (not ready) is not detected within 5 seconds after turning OFF of the blade replacement signal. At this time, a trouble detection signal (24V off) is detected. | | |
| | | F23-08 | The blade READY signal (ready) is not detected within 5 seconds after turning ON of the blade replacement signal, or the blade READY signal (not ready) is not detected within 5 seconds after turning OFF of the blade replacement signal. At this time, an M14 (cleaning blade) trouble detection signal (blown fuse) is detected. | | |
| | | | | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------------------|--------------|---|---|--|
| Main body | Motor abnormality | F23-09 | The blade READY signal (ready) is not detected within 5 seconds after turning ON of the blade replacement signal, or the blade READY signal (not ready) is not detected within 5 seconds after turning OFF of the cleaning blade replacement signal. At this time, no trouble detection signal is detected. | The machine stops immediately and RL1 (main) is turned OFF. | M14 (cleaning blade) DCDB (DC drive board) PRCB (printer control board) PS30 (blade 1) PS31 (blade 2) |
| | | F23-10 | The drum READY2 signal (ready) is not detected within 5 seconds after turning ON of M2 (drum). | | M2 (drum) PRCB (printer control board) |
| | | F23-11 | A trouble detection signal (blown fuse) is detected when M11 (toner supply 1) is turned ON. | | M11 (toner supply 1) DCDB (DC drive board) |
| | | F24-01 | One minutes after starting control over the HTR1 (drum heater) at depression of SW1 (main switch), the change in TH5 (drum temperature) temperature is 2°C or less and the drum temperature is 10°C or lower. | | TH5 (drum temperature) DTSB (drum temperature sensor board) PRCB (printer control board) HTR1 (drum heater) |
| | | F24-02 | One minutes after starting control over the HTR1 (drum heater) at depression of SW1 (main switch), the change in TH5 (drum temperature) temperature is 2°C or less and the drum temperature is 10°C or higher. One minute after this, the drum temperature is 60°C or higher. | | |
| | | F24-04 | Drum heater short-circuit | | HTR1 (drum heater) |
| | High voltage power supply abnormality | F28-01 | The charging ON/OFF operation has been performed five consecutive times since the charging trouble detection signal was detected at start of charging. | If there is a paper in copying process when this jam occurs, the machine stops after completion of copied paper ejection. RL1 (main) is turned OFF. | HV1 (high voltage unit1) |
| | | F28-02 | The toner transfer ON/OFF operation has been performed five consecutive times since the transfer trouble detection signal was detected at start of toner transfer. | | HV2 (high voltage unit 2) |
| | | F28-03 | The toner separation ON/OFF operation has been performed five consecutive times since the separation trouble detection signal was detected at start of toner separation. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------------------|--------------|--|---|---|
| Main body | High voltage power supply abnormality | F28-04 | An HV2 (high voltage unit 2) trouble detection signal (blown 24V fuse) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | HV2 (high voltage unit 2) |
| | Process abnormality | F29-01 | The Dmax sensor is dirty during Dmax correction. If this trouble is detected ten successive times, the corresponding service code is displayed. | The main body stops immediately and RL1 (main) is turned OFF. | TCSB (toner control sensor board) PRCB (printer control board) |
| | | F29-02 | The rotation speed of the developing sleeve reached the maximum value during Dmax correction. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. Main body control is performed using previous data. | |
| | | F29-03 | The control patch is not output during Dmax correction. (No output from the Dmax sensor) | The main body stops immediately and RL1 (main) is turned OFF. | |
| | | F29-04 | The γ sensor is dirty during γ correction. If E29-4 or E29-7 is detected ten successive times, the corresponding error code is displayed. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. Main body control is performed using previous data. | |
| | | F29-05 | The control patch is not output during γ correction. (No output from the sensor) | The main body stops immediately and RL1 (main) is turned OFF. | |
| | | F29-06 | A regression error occurred when the γ curve was obtained for γ correction. | The main body stops immediately and RL1 (main) is turned OFF. | |
| | | F29-07 | The γ sensor is dirty during dot diameter correction. If E29-4 or E29-7 is detected ten successive times, the corresponding error code is displayed. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. Main body control is performed using previous data. | |
| | | F29-08 | Dot diameter correction ended with an abnormal value. | The main body stops immediately and RL1 (main) is turned OFF. | |
| | | F29-09 | A drum surface potential of over 100V was detected 5 or more times when a 0V check was performed by drum potential sensor. If this trouble is detected five successive times, the corresponding error code is displayed. | DPSB (drum potential sensor board) PRCB (printer control board) | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------|--------------|---|---|--|
| Main body | Process abnormality | F29-10 | The control patch is not output because VI exceeds 350V during drum potential correction. Drum potential correction is not completed if it is made 5 or more times. If this trouble is detected 5 successive times, the corresponding error code is displayed. | The main body stops immediately and RL1 (main) is turned OFF. | DPSB (drum potential sensor board) PRCB (printer control board) |
| | | F29-11 | Drum potential correction is not completed if it is made 10 or more times. If this trouble is detected 5 successive times, the corresponding error code is displayed. | | |
| | | F29-12 | Automatic adjustment of the transfer current is not completed. | | |
| | | F29-13 | Automatic adjustment of the separation (AC) current is not completed. | | |
| | | F29-14 | Automatic adjustment of the separation (DC) current is not completed. | | |
| | | F29-15 | Automatic adjustment of the developing bias (DC) current is not completed. | | |
| | Fan abnormality | F32-01 | The FM2 EM signal was abnormal 2 seconds after turning FM2 (developing suction) ON. Two seconds after turning FM2 OFF and ON again, the FM2 EM signal is still abnormal and a trouble detection signal (24V off) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | ACDB (AC drive board) FM2 (developing suction) |
| | | F32-02 | The FM2 EM signal was abnormal 2 seconds after turning FM2 (developing suction) ON. Two seconds after turning FM2 OFF and ON again, the FM2 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | |
| | | F32-03 | The FM2 EM signal was abnormal 2 seconds after turning FM2 (developing suction) ON. Two seconds after turning FM2 OFF and ON again, the FM2 EM signal is still abnormal and a trouble detection signal (24V off/blown fuse) is not detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-----------------------------|--------------|---|---|---|
| Main body | Fan abnormality | F32-04 | The FM1 EM signal was abnormal 2 seconds after turning ON of FM1 (paper exit). Two seconds after turning FM1 OFF and ON again, the FM1 EM signal is still abnormal and a trouble detection signal (24V off) is detected. | The machine stops immediately and RL1 (main) is turned OFF. | ADUSDB (ADU stand drive board) FM1 (paper exit) |
| | | F32-05 | The FM1 EM signal was abnormal 2 seconds after turning ON of FM1 (paper exit). Two seconds after turning FM1 OFF and ON again, the FM1 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | |
| | | F32-06 | The FM1 EM signal was abnormal 2 seconds after turning ON of FM1 (paper exit). Two seconds after turning FM1 OFF and ON again, the FM1 EM signal is still abnormal and a trouble detection signal (24V off/blown fuse) is not detected. | | |
| | | F32-07 | FM1 (paper exit) EM signal becomes faulty after completion of printing. | | |
| | ADU stand motor abnormality | F33-01 | A trouble detection signal is detected 2 consecutive times (the first signal is ignored) 4 seconds after turning ON of M12 (registration motor). | The machine stops immediately and RL1 (main) is turned OFF. | M12 (registration) |
| | | F33-02 | When M5 (paper reverse/exit) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. | | M5 (paper reverse/exit) ADUSDB (ADU stand drive board) |
| | | F33-03 | When M9 (transfer) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. | | M9 (transfer) ADUSDB (ADU stand drive board) |
| | | F33-04 | When M10 (paper exit) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. | | M10 (paper exit) ACDB (AC drive board) |
| | | F33-05 | When M16 (Web drive) which has been OFF is turned ON, a trouble detection signal (blown fuse/24 V off) is detected. | | M16 (Web drive) ACDB (AC drive board) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---|--------------|--|---|--|
| Main body | ADU stand motor abnormality | F33-06 | When M16 (Web drive) which has been OFF is turned ON, error detection signal (24V off) detected blown fuse in normal condition. | If there is a paper in copying process when this jam occurs, the machine stops after completion of copied paper ejection. RL1 (main) is turned OFF. | M16 (Web drive) |
| | Too high fixing temperature abnormality | F34-01 | TH1 (fixing temperature 1) has detected 210°C or more five consecutive times at intervals of 1 second. | The machine stops immediately. RL1 (main) is turned OFF. | PRCB (printer control board) ACDB (AC drive board) L2 (fixing heater lamp 1) L3 (fixing heater lamp 2) L4 (fixing heater lamp 3) TH1 (fixing temperature 1) TH2 (fixing temperature 2) TH3 (fixing temperature 3) TH4 (fixing temperature 4) |
| | | F34-02 | TH3 (fixing temperature 3) has detected 230°C or more five consecutive times at intervals of 1 second. | | |
| | | F34-03 | Overheating (228°C or higher) was detected for TH1 (fixing temperature 1) and TH2 (fixing temperature 2) output voltage by the comparator circuit. | | |
| | | F34-04 | Overheating (228°C or higher) was detected for TH3 (fixing temperature 3) and TH4 (fixing temperature 4) output voltage by the comparator circuit. | | |
| | Too low fixing temperature abnormality | F35-01 | TH1 (fixing temperature 1) does not detect 50°C or higher when 180 seconds have passed since fixing ON control started at depression of SW1 (main switch). | | |
| | | F35-02 | TH3 (fixing temperature 3) does not detect 50°C or higher when 180 seconds have passed since fixing ON control started at depression of SW1 (main switch). | | |
| | Fixing sensor abnormality | F36-01 | TH1 (fixing temperature 1) has detected 200°C or higher 30 or more consecutive times at intervals of 1 second. | | |
| | | F36-02 | TH3 (fixing temperature 3) has detected 220°C or higher 30 or more consecutive times at intervals of 1 second. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|---|--|--|
| Main body | Fixing sensor abnormality | F36-03 | Underheating (-6°C or less) was detected for TH1 (fixing temperature 1) output voltage by the comparator circuit. | The machine stops immediately. RL1 (main) is turned OFF. | PRCB (printer control board) ACDB (AC drive board) L2 (fixing heater lamp 1) L3 (fixing heater lamp 2) L4 (fixing heater lamp 3) TH1 (fixing temperature 1) TH2 (fixing temperature 2) TH3 (fixing temperature 3) TH4 (fixing temperature 4) |
| | | F36-04 | Underheating (-6°C or less) was detected for TH3 (fixing temperature 3) output voltage by the comparator circuit. | | |
| | | F36-05 | Underheating (-6°C or less) or overheating (240.5°C or more) was detected for TH2 (fixing temperature 2) output voltage by the comparator circuit. | | |
| | | F36-06 | Underheating (-6°C or less) or overheating (240.5°C or more) was detected for TH4 (fixing temperature 4) output voltage by the comparator circuit. | | |
| | Scanner abnormality | F41-01 | PS5 (scanner HP) or PS7 (ADF brake) is not turned ON within 0.5 seconds after start of HP search operation, or an M13 (scanner drive) trouble detection signal (24V off) is detected. | | SCDB (scanner drive board) M13 (scanner drive) PS7 (ADF brake) PS5 (scanner HP) PS6 (original HP) PS4 (scanner return) |
| | | F41-02 | PS5 (scanner HP) or PS7 (ADF brake) is not turned ON within 0.5 seconds after start of HP search operation, or an M13 (scanner drive) trouble detection signal (blown fuse) is detected. | | |
| | | F41-03 | PS5 (scanner HP) or PS7 (ADF brake) is not turned ON within 0.5 seconds after start of HP search operation, or an M13 (scanner drive) trouble detection signal (24 V off/blown fuse) is not detected. | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------|--------------|--|--|---|
| Main body | Scanner abnormality | F41-04 | During HP search operation, PS5 (scanner HP) is not turned ON within 1 second after turning ON of PS7 (ADF brake). An M13 (scanner drive) trouble detection signal (24V off) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | SCDB (scanner drive board) M13 (scanner drive) PS7 (ADF brake) PS5 (scanner HP) PS6 (original HP) PS4 (scanner return) |
| | | F41-05 | During HP search operation, PS5 (scanner HP) is not turned ON within 1 second after turning ON of PS7 (ADF brake). An M13 (scanner drive) trouble detection signal (blown fuse) is detected. | | |
| | | F41-06 | During HP search operation, PS5 (scanner HP) is not turned ON within 1 second after turning ON of PS7 (ADF brake). An M13 (scanner drive) trouble detection signal (24V off/blown fuse) is not detected. | | |
| | | F41-07 | During scan-forward operation, PS4 (scanner return) is turned ON before PS6 (original HP) is turned ON. | | PS6 (original HP) PS4 (scanner return) |
| | | F41-08 | During scan-forward operation, PS4 (scanner return) is not turned ON within 0.13 second after turning OFF of PS6 (original HP). | | PS7 (ADF brake) PS5 (scanner HP) |
| | | F41-09 | After original scanning, PS7 (ADF brake) is turned ON before PS5 (scanner HP) is turned ON. | | |
| | Write abnormality | F41-10 | The M17 lock signal is not detected within 25 seconds after an attempt is made to change the M17 (polygon) speed. The trouble detection signal (24V off) is detected. | | PMDb (polygon mirror drive board) PRCB (printer control board) M17 (polygon) |
| | | F41-11 | The M17 (polygon) lock signal is not detected within 25 seconds after an attempt is made to change the M17 (polygon) speed. The trouble detection signal (24V off) is not detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-----------------|--------------|---|--|---|
| Main body | Fan abnormality | F42-01 | The FM7 EM signal was abnormal 2 seconds after turning ON of FM7 (scanner cooling). Two seconds after turning FM7 OFF and ON again, the FM7 EM signal is still abnormal and a trouble detection signal (24V off) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | SCDB (scanner drive board) FM7 (scanner cooling) |
| | | F42-02 | The FM7 EM signal was abnormal 2 seconds after turning ON of FM7 (scanner cooling). Two seconds after turning FM7 OFF and ON again, the FM7 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | |
| | | F42-03 | The FM7 EM signal was abnormal 2 seconds after turning ON of FM7 (scanner cooling). Two seconds after turning FM7 OFF and ON again, the FM7 EM signal is still abnormal and a trouble detection signal (24 V off/blown fuse) is not detected. | | |
| | | F42-04 | The FM5 EM signal was abnormal 2 seconds after turning ON of FM5/8 (write section cooling 1/2). Two seconds after turning FM5 OFF and ON again, the FM5 EM signal is still abnormal and a trouble detection signal (24 V off) is detected. | | DCDB (DC drive board) FM5 (write section cooling 1) FM8 (write section cooling 2) |
| | | F42-05 | The FM5 EM signal was abnormal 2 seconds after turning ON of FM5/8 (write section cooling 1/2). Two seconds after turning FM5 OFF and ON again, the FM5 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | |
| | | F42-06 | The FM5 EM signal was abnormal 2 seconds after turning ON of FM5/8 (write section cooling 1/2). Two seconds after turning FM5 OFF and ON again, the FM5 EM signal is still abnormal and a trouble detection signal (24 V off/blown fuse) is not detected. | | |
| | | F42-07 | At the start of copying, an FM5 (write section cooling 1/2) trouble detection signal is detected. | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|---|--|---|
| Main body | Image control abnormality | E46-01 | During image write, APC cannot be performed for sub-scanning beam correction. The 12 VDC power for driving the laser is not supplied. The laser does not turn ON due to defective MPC or laser. The index sensor cannot detect the laser because the polygon mirror does not rotate, the index sensor is displaced, or the index sensor is defective. | If copy operation is being performed, the main body stops after paper ejection. The RL1 (main) is turned OFF. | Write section ICB (image control board) power connector |
| | | | | | ICB (image control board) |
| | | E46-02 | Illegal address of FIFO for scanner. During image read, image data compression is not completed normally. | | ICB (image control board) |
| | | E46-03 | Illegal address of FIFO for printer. During image write, image data expansion is not completed normally. The FIFO of the compression/expansion chip caused an error interrupt. | | ICB (image control board) |
| | | E46-05 | During image write, the compressed image data remains after completion of the expansion process. | | ICB (image control board) |
| | | E46-06 | Decompression error. | | ICB (image control board) |
| | | E46-08 | When APC is performed, the index sensor output does not change. | | Write section Power connector of ICB (image control board) |
| | | E46-12 | Compression of the read image and expansion in the page memory are not completed within the specified time after negation of SVV. | | ICB (image control board) |
| | | E46-13 | During image read, image data compression from the scanner to the memory is not completed within the specified time. Image data expansion from the scanner to the page memory is not completed within the specified time. SVV is not detected within the specified time. | | PRCB (printer control board) ICB (image control board) DF-313 |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|---|--|---|
| Main body | Image control abnormality | E46-14 | During image write, image data expansion from the memory to the printer is not completed within the specified time. Image data output from the page memory to the printer is not completed within the specified time. PVV is not detected within the specified time. | If copy operation is being performed, the main body stops after paper ejection. The RL1 (main) is turned OFF. | PRCB (printer control board) ICB (image control board) |
| | | E46-15 | During image write, improper processing was performed. For example, the expansion device was accessed although there was no resource. | | ICB (image control board) ICB program |
| | | E46-16 | During image read, improper processing was performed. For example, the expansion device was accessed although there was no resource. | | ICB (image control board) ICB program |
| | | E46-17 | During image processing, a filter coefficient could not be generated properly. | | ICB (image control board) ICB program |
| | | E46-19 | During access to the memory device, a software error was detected. | | ICB (image control board) ICB program |
| | | E46-21 | Expansion from the memory to the page memory is not completed within the specified time. Compression from the page memory to the memory is not completed within the specified time. Compressed data transfer between memories is not completed within the specified time. | | PRCB (printer control board) ICB program |
| | | E46-23 | During image read, SVV is not turned OFF within the specified time and therefore preparation for next page scanning cannot be started. | | ICB (Image Control Board) |
| | | E46-24 | Shading correction error (GA error) | | ICB (Image Control Board) ICB program |
| | | E46-25 | AOC/AGC error - The light blocking cover and lens cover are removed from the read section. - The A/D conversion board connector is disconnected. - The exposure lamp intensity is excessive. - The exposure lamp does not light. | | ADB (A/D conversion board) L1 (exposure lamp) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|--|---|---|
| Main body | Image control abnormality | E46-26 | Correction data saved on a resolution basis is not found. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. If copy operation is being performed, the main body stops after paper ejection. The RL1 (main) is turned OFF. | ICB (image control board) |
| | | E46-27 | The density correction γ curve cannot be generated properly. | | ICB (image control board) |
| | | E46-29 | Calibration start error | | ICB (image control board) ICB program |
| | | E46-30 | Calibration end error | | ICB (image control board) ICB program |
| | | E46-31 | An attempt was made to carry out APC initial sampling before completion of MPC. | | ICB (image control board) ICB program |
| | | E46-32 | An attempt was made to perform MPC during APC. | | ICB (image control board) ICB program |
| | | E46-33 | An attempt was made to make sub-scan beam correction before completion of APC or MPC. | | ICB (image control board) ICB program |
| | | E46-34 | An attempt was made to make sub-scan beam interval correction although the image write clock was abnormal. | | ICB (image control board) ICB program |
| | | E46-40 | Hard disk initial fault or poor connection of connector. | The main unit stops immediately and RL1 (main) is turned OFF. | ICB (Image Control Board) ICB program HDD (Hard Disk Drive) |
| | | E46-41 | Job information could not be stored on the hard disk. | | |
| | | E46-42 | A route could not be opened during hard disk job automatic deletion. | | |
| | | E46-43 | The specified screen does not exist on the hard disk in the stamp/overlay mode. | | |
| | | E46-60 | Adjustment of the sub-scan beam interval failed for the following reason: - Defective index sensor - M24 (laser correction) driving failure - Abnormal 12 VDC power supply - M17 (polygon) driving failure | Error code is not displayed on operation panel. It is displayed only on data collection, list output. | Write section |
| | | E46-61 | Scanning started before completion of original skew correction. (Skew correction was not in time.) | | DFOB (RADF control board) PS311(original mis-centering detection 1) PS312(original mis-centering detection 2) |
| | | E46-62 | Printing started before correction of paper mis-centering. (Mis-centering correction was not in time.) | | PS1 (paper mis-centering) |
| | | E46-63 | AGC was retried because of reduction in exposure lamp intensity, but no error occurred. | | L1 (exposure lamp) |
| | | E46-64 | The PWM γ curve could not be generated properly. | | TCSB (toner control sensor board) |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------------|--------------|---|--|---|
| Main body | Image control abnormality | E46-80 | The message queue was insufficient or destroyed. | If copy operation is being performed, the main body stops after paper ejection. The RL1 (main) is turned OFF. | ICB (image control board) |
| | | E46-81 | The parameter value is too large. | | |
| | | E46-82 | The ID of the message queue source task is undefined. | | |
| | | E46-83 | The message reception event is undefined. | | |
| | | E46-90 | The access to the memory is illegal. | | ICB (image control board) DIMM contact failure |
| | | E46-91 | The header read address is illegal. | | ICB (image control board) |
| | Communication abnormality | E50-01 | Main unit drive serial input error 1. Serial data is not received from the main unit drive section within 0.5 second after reception of power-on ACK. | The machine stops immediately. RL1 (main) is turned OFF. | PRCB (printer control board) |
| | | E50-02 | Main unit drive serial input error 2. Serial data is not received from the main unit drive section within 0.5 second after reception of power-on ACK. | | |
| | | E50-03 | Main unit drive serial input error 3. Serial data is not received from the main unit drive section within 0.5 second after reception of power-on ACK. | | |
| | | E50-04 | Main unit drive serial input error 4. Serial data is not received from the main unit drive section within 0.5 second after reception of power-on ACK. | | |
| | | E50-05 | Drive board communication reception error detection fault. A reception error occurred during reception of drive board serial data, or a data checksum error or ID information error occurred four consecutive times although a resent request had been issued three times. | | PRCB (printer control board) Drive boards |
| | | E50-10 | Image processing board communication break error. Initial data is not received from ICB (image control board) within 10 seconds after power-on. | | PRCB (printer control board) ICB (image control board) |
| | | E50-11 | Image control board communication serial reception error detection fault. | | ICB (image control board) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-----------------|--------------|--|--|---|
| Main body | Fan abnormality | F52-01 | The FM3 EM signal and FM4 EM signal were abnormal 2 seconds after turning ON of FM3 (main body cooling 1) and FM4 (main body cooling 2). Two seconds after turning FM3 and FM4 OFF and ON again, the FM3 EM signal and FM4 EM signal are still abnormal and a trouble detection signal (24 V off) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | ACDB (AC drive board) FM3 (main body cooling 1) FM4 (main body cooling 2) |
| | | F52-02 | The FM3 EM signal and FM4 EM signal were abnormal 2 seconds after turning ON of FM3 (main body cooling 1) and FM4 (main body cooling 2). Two seconds after turning FM3 and FM4 OFF and ON again, the FM3 EM signal and FM4 EM signal are still abnormal and a trouble detection signal (24 V off) is not detected. | | |
| | | F52-03 | The FM3 EM signal was abnormal 2 seconds after turning ON of FM3 (main body cooling 1). Two seconds after turning FM3 OFF and ON again, the FM3 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | ACDB (AC drive board) FM3 (main body cooling 1) |
| | | F52-04 | The FM3 EM signal was abnormal 2 seconds after turning ON of FM3 (main body cooling 1). Two seconds after turning FM3 OFF and ON again, the FM3 EM signal is still abnormal and a trouble detection signal (blown fuse) is not detected. | | |
| | | F52-05 | The FM4 EM signal was abnormal 2 seconds after turning ON of FM4 (main body cooling 2). Two seconds after turning FM4 OFF and ON again, the FM4 EM signal is still abnormal and a trouble detection signal (blown fuse) is detected. | | ACDB (AC drive board) FM4 (main body cooling 2) |
| | | F52-06 | The FM4 EM signal was abnormal 2 seconds after turning ON of FM4 (main body cooling 2). Two seconds after turning FM4 OFF and ON again, the FM4 EM signal is still abnormal and a trouble detection signal (blown fuse) is not detected. | | |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|---------------------|--------------|--|---|--|
| Main body | Fan abnormality | F52-07 | The FM6 EM signal was abnormal 2 seconds after turning ON of FM6 (main body cooling 3). Two seconds after turning FM6 OFF and ON again, the FM6 EM signal is still abnormal and a trouble detection signal (24V off) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | ACDB (AC drive board) FM6 (main body cooling 3) |
| | | F52-08 | The FM6 EM signal was abnormal 2 seconds after turning ON of FM6 (main body cooling 3). Two seconds after turning FM6 OFF and ON again, the FM6 EM signal is still abnormal and a trouble detection signal (blown fuse) is not detected. | | |
| | | F52-09 | The FM6 EM signal was abnormal 2 seconds after turning ON of FM6 (main body cooling 3). Two seconds after turning FM6 OFF and ON again, the FM6 EM signal is still abnormal and a trouble detection signal (24V off/blown fuse) is not detected. | | |
| | | F52-10 | At the start of copying, an FM3 (main body cooling 1) or FM4 (main body cooling 2) trouble detection signal is detected. | | |
| | | F52-11 | At the start of copying, an FM6 (main body cooling 3) trouble detection signal is detected. | | |
| | Motor abnormality | F53-01 | A trouble detection signal has been detected twice (one signal is ignored) 3 seconds after turning ON of M1 (main). | Error code is not displayed on operation panel. It is displayed only on data collection, list output. However, the counter does not function. | M1 (main) |
| | Counter abnormality | F53-02 | When C (T) (total counter) which has been OFF is turned ON, a trouble detection signal (blown fuse/24 V off) is detected. | | ACDB (AC drive board) C (T) (total counter) |
| | | F53-03 | When C (T) (total counter) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. A trouble detection signal (24 V off) is not detected. | | |
| | | F53-04 | When C (K) (key counter) which has been OFF is turned ON, a trouble detection signal (blown fuse/24 V off) is detected. | | |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-----------------------------|--------------|--|---|--|
| Main body | Counter abnormality | F53-05 | When C (K) (key counter) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. A trouble detection signal (24V off) is not detected. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. However, the counter does not function. | ACDB (AC drive board) C (K) (key counter) |
| | Power supply abnormality | F53-06 | During serial initial communication, a 12 V blow fuse signal (AC drive) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | PRCB (printer control board) |
| | | F53-07 | During serial initial communication, a 5 V blow fuse signal (AC drive) is detected. | | |
| | | F53-08 | A 12V trouble detection signal is detected on PRCB (printer control board). | | |
| | | F53-09 | An excessive AC voltage error signal is detected. | Error code is not displayed on operation panel. It is displayed only on data collection, list output. | Abnormal voltage input |
| | | F53-10 | During serial initial communication, a 5 V blow fuse signal (DC drive) is detected. | The machine stops immediately. RL1 (main) is turned OFF. | PRCB (printer control board) Solenoids Motors |
| | | F53-11 | A trouble detection signal (solenoid/blown motor fuse) is detected at the time of start. A trouble detection signal (24V off) is detected. | | |
| | | F53-12 | A trouble detection signal (solenoid/blown motor fuse) is detected at the time of start. A trouble detection signal (24V off) is not detected. | | |
| | Operation panel abnormality | E56-2 | Communication between the ICB (image control board) and OB1 (operation board 1) does not start within 30 seconds after SW1 (main) is turned ON. | Operation panel does not display normally. | ICB (image control board) OB1 (operation board 1) |
| | | F56-11 | When SW1 (main switch) was turned ON, area which had not been written by ISW was detected in the operation section control program (O1). | | O1 program |
| | | F56-12 | When SW1 (main switch) was turned ON, area which had not been written by ISW was detected in the operation section control program (O2). | | O2 program |
| | | F56-13 | When SW1 (main switch) was turned ON, area which had not been written by ISW was detected in the operation section control program (O3). | | O3 program |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|------|-------------------|--------------|---|---|---|
| RADF | EDH-2 abnormality | E60-01 | A resend request was received after the main unit had sent data in response to the data resend request from EDH-2. | If copy operation is being performed, the main body stops after paper ejection. The RL1 (main) is turned OFF. | ICB (image control board) DFCB (RADF control board) Communication cable |
| | | E60-02 | A checksum error or SRGA reception error was detected when data was received in response to the data resend request which had been sent at detection of a checksum error or SRGA reception error (during reception in the serial communication mode). | | |
| | | E60-03 | No response to initial communication request from main body to RADF for 5 seconds after SW1 (main switch) is turned ON. | | |
| | | F60-11 | When SW1 (main switch) was turned ON, an area which had not been written by ISW was detected in the RADF control program. | | DFCB (RADF control board) RADF program |
| | | F67-01 | PS306 (original registration detection) fault. | If there is a paper in copying process when this jam occurs, the machine stops after completion of copied paper ejection. RL1 (main) is turned OFF. | PS306 (original registration detection) |
| | | F67-02 | PS308 (original conveyance detection) fault. | | PS308 (original conveyance detection) |
| | | F67-03 | PS309 (original reversal detection) fault. | | PS309 (original reversal detection) |
| | | F67-04 | Non-volatile memory fault. | | DFCB (RADF control board) |
| | | F67-05 | FM301 (ADF fan) fault. | | FM301 (ADF fan) |
| | | F67-06 | PS304 (reverse jam detection) fault. | | PS304 (reverse jam detection) |
| | | F67-07 | PS313 (original exit reverse detection) fault. | | PS313 (original exit reverse detection) |
| | | F67-08 | M303 (tray up/dpwn drive) fault. | | M303 (tray up/down drive) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----|-------------------------|--------------|---|--|--|
| FNS | FN-104/FN-4 abnormality | E70-1 | Communication error. | The main body and FNS are stopped immediately. RL1 (main) is turned OFF. | FNS CB (FNS control board) Connector |
| | | E70-2 | Start response error. | | FNS CB (FNS control board) Connector |
| | | F77-1 | The shift unit does not reach the shift position or home position within the specified time. | | FNS CB (FNS control board) M2 (roller shift) PS18 (roller shift HP) |
| | | F77-2 | PS2(tray upper limit) or PS7 (staple paper exit upper limit) does not go ON within the specified time after the start of M3(tray up-down) operation. | | FNS CB (FNS control board) M3 (tray up-down) PS2 (tray upper limit) PS7 (staple paper exit upper limit) |
| | | F77-3 | PS8 (alignment plate/upper HP) does not go OFF within the specified time after the start of M5 (alignment plate/upper) operation, or does not turn ON after OFF. | | FNS CB (FNS control board) RB (relay board) M5 (alignment plate/upper) PS8 (alignment plate/upper HP) |
| | | F77-4 | M7(paper exit roller) does not reach the prescribed speed within the specified time after the start of its operation. | | FNS CB (FNS control board) M7(paper exit roller) |
| | | F77-5 | Opening/closing operation is not completed within the specified time after the start of M8(paper exit opening) operation. (PS12(paper exit opening) does not go ON or OFF.) | | FNS CB (FNS control board) M8 (paper exit opening) PS12 (paper exit opening) |
| | | F77-6 | PS11(stapler movement HP) does not go OFF after the start of M11(stapler movement) operation. Or it does not go ON after OFF. | | FNS CB (FNS control board) RB (relay board) M11 (stapler movement) PS11 (stapler movement HP) |
| | | F77-7 | M4 (stapler rotation) abnormality. | | FNS CB (FNS control board) RB (relay board) M4 (stapler rotation) |
| | | F77-8 | Stapler/R rotation abnormality. | | FNS CB (FNS control board) RB (relay board) PS14 (stapler rotation HP) |

ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----|-------------------------|--------------|--|--|--|
| FNS | FN-104/FN-4 abnormality | F77-11 | PS33(clincher HP/F) and PS34(stapler HP/F) do not go ON within the specified time after the start of M23(clincher/F) and M24(stapler/F) operation. | The main body and FNS are stopped immediately. RL1 (main) is turned OFF. | FNS CB (FNS control board) RB (relay board) M23 (clincher/F) M24 (stapler/F) PS33 (clincher HP/F) PS34 (stapler HP/F) |
| | | F77-12 | PS30(clincher HP/F) and PS31(stapler HP/F) do not go ON within the specified time after the start of M21(clincher R) and M22(stapler R) operation. | | FNS CB (FNS control board) RB(relay board) M21(clincher/R) M22(stapler/R) PS30(clincher HP/R) PS31(stapler HP/R) |
| | | F77-15 | M1(FNS conveyance) does not reach the prescribed speed within the specified time after the start of its operation. | | FNS CB (FNS control board) M1(FNS conveyance) |
| | | F77-21 | PS23(stapling and folding stopper HP) does not go ON within the specified time after M14(stapling and folding stopper) starts operation of HP detection. | | FNS CB (FNS control board) RB (relay board) M14 (stapling and folding stopper) PS23 (stapling and folding stopper HP) |
| | | F77-22 | PS24(alignment plate/lower HP) does not go ON within the specified time after M15(alignment plate/lower) starts operation of HP detection. | | FNS CB (FNS control board) RB (relay board) M15 (alignment plate/lower) PS24 (alignment plate/lower HP) |
| | | F77-23 | PS21(stapling and folding stopper release HP) does not go ON within the specified time after M17(stapling and folding stopper release) starts operation of HP detection. | | FNS CB (FNS control board) RB (relay board) M17 (stapling and folding stopper release) PS21 (stapling and folding stopper release HP) |
| | | F77-24 | PS27(folding stopper HP) does not go ON within the specified time after M18(folding stopper) starts operation of HP detection. | | FNS CB (FNS control board) M18 (folding stopper) PS27 (folding stopper HP) |

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|------------------------------|--------------|--|--|--|
| FNS | FN-104/FN-4 abnormality | F77-25 | PS22(folding knife HP) does not go ON within the specified time after M19(folding knife) starts operation of HP detection. | The main body and FNS are stopped immediately. RL1 (main) is turned OFF. | FNS CB (FNS control board) M19 (folding knife) PS22(folding knifeHP) |
| | | F77-26 | M20(folding conveyance) does not reach the prescribed speed within the specified time after the start of its operation. | | FNS CB (FNS control board) M20 (folding conveyance) |
| | TMG-1 abnormality | F77-31 | M101(conveyance) does not reach the prescribed speed within the specified time after the start of its operation. | | TUDB (TU drive board) M101 (conveyance) |
| | | F77-32 | PS106(trimmer HP) does not turn ON within the specified time after M102(trimmer) starts operation of HP detection. | | TUDB (TU drive board) M102 (trimmer) PS106 (trimmer HP) |
| | | F77-33 | PS103(stopper HP) does not turn ON within the specified time after M103(stopper) starts operation of HP detection. | | TUDB (TU drive board) M103 (stopper) PS103 (stopper HP) |
| | | F77-34 | PS104(stopper release HP) does not turn ON within the specified time after M104(stopper release) starts operation of HP detection. | | M104 (stopper release) PS104 (stopper release HP) |
| | | F77-35 | PS105(press HP) does not turn ON within the specified time after M105(press) starts operation of HP detection. | | TUDB (TU drive board) M105 (press) PS105 (press HP) |
| | | F77-36 | PS112(pushers) does not turn ON within the specified time after M107(pushers) starts operation of HP detection. | | TUDB (TU drive board) M107 (pushers) PS112 (pushers) |
| | | F77-37 | PS110(upper limit) does not turn ON within the specified time after M106(holder) starts operation of HP detection. | | TUDB (TU drive board) M106 (holder) PS110 (upper limit) |
| | Cover Insertor A abnormality | F77-41 | PS203 (sheet tray lower limit) or PS204 (sheet tray upper limit) does not go ON within the specified time after the start of M201(sheet tray) operation. | | FNSCB(FNScontrolboard) DB(PI drive board) M201(sheet tray) PS203(sheet tray lower limit) PS204(sheet tray upper limit) |
| | FN-104/FN-4 abnormality | F77-91 | Communication abnormality in FNS CB(FNS control board) when sub-CPU receives data. | | FNS CB (FNS control board) |
| | | F77-92 | Communication abnormality in FNS CB(FNS control board) when main CPU receives data. | | FNS CB (FNS control board) |
| Main body | ISW abnormality | F80-01 | No response from PRCB (printer control board) for 5 seconds after SW1 (main switch) is turned ON. | RL1 (main) is turned OFF. | PRCB (printer control board) |
| | | F80-02 | Communication abnormality in PRCB (printer control board). | | OB1 (operation board) |
| | | F80-03 | Communication abnormality in operation unit. | | |
| | ISW abnormality | F80-10 | When SW1 (main switch) was turned ON, an area which had not been written by ISW was detected in the printer control program. | | C1 program |
| | | F80-11 | | | C2 program |
| | | F80-12 | | | C3 program |
| | | F80-13 | | | C4 program |
| | | F80-30 | When data is transferred by ISW, normal header information cannot be received within the specified time. | | Printer cable |
| | | F80-31 | When data is transferred by ISW, a checksum error or header error was detected in the downloaded data. | | Defective printer cable Program file error |

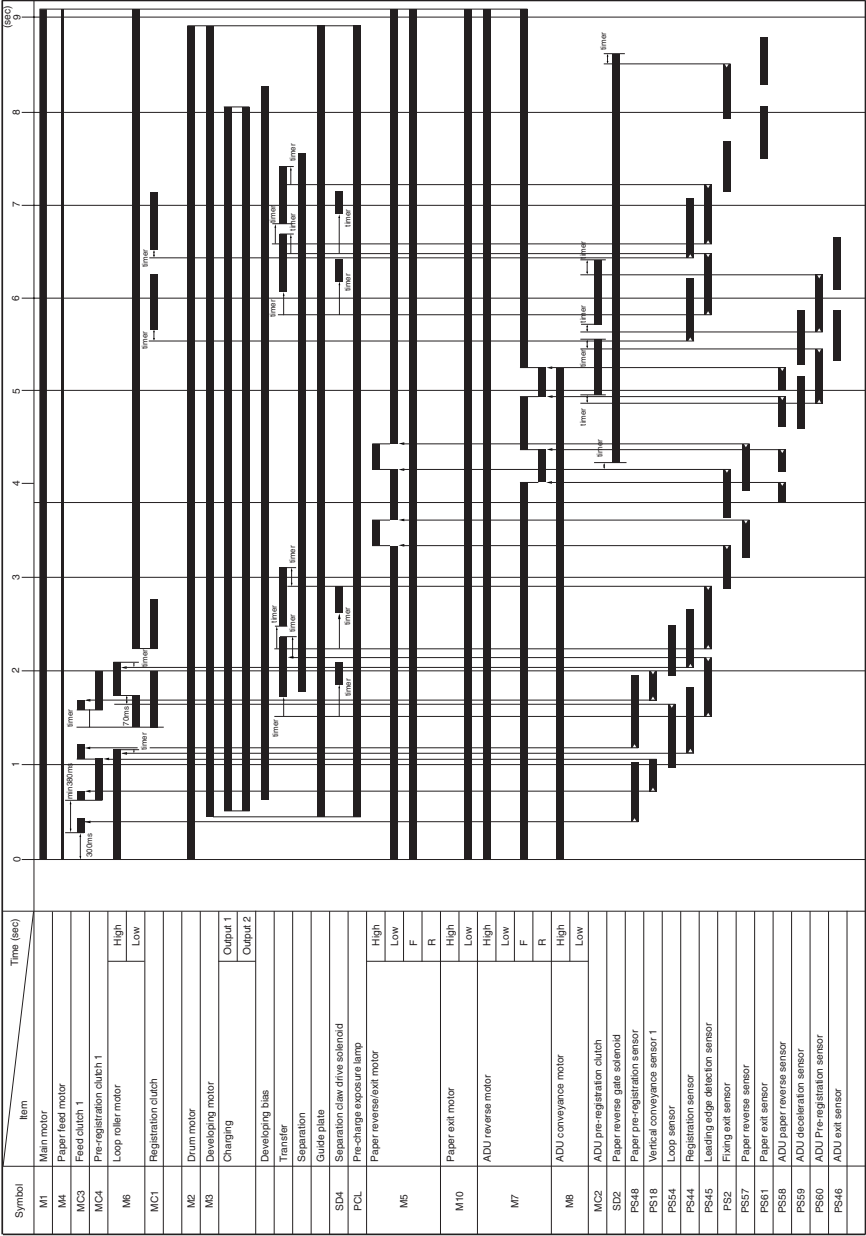
ERROR CODE LIST

| | Classification | Warning code | Causes | Operation in case of warning occurrence | Estimated abnormal parts |
|-----------|-----------------------|--------------|--|---|--|
| Main body | ISW abnormality | F80-32 | When data is transferred by ISW, data cannot be written to the flash ROM properly. | RL1 (main) is turned OFF. | Printer cable Program transfer destination board. |
| | ADU stand abnormality | E90-01 | ADU drive serial input error 1. Serial data cannot be received from ADUSDB (ADU stand drive board) 0 (ID) within 0.5 second when SW1 (main) was turned ON. | | ADUSDB (ADU stand drive board) |
| | | E90-02 | ADU drive serial input error 1. Serial data cannot be received from ADUSDB (ADU stand drive board) 7 (ID) within 0.5 second when SW1 (main) was turned ON. | The FNS/main body stops immediately and RL1 is turned OFF. | ADUSDB (ADU stand drive board) |
| | | F93-01 | A-5 V or 12 V blown fuse signal is detected during serial initial communication. | | ADUSDB (ADU stand drive board) |
| | | F93-02 | A-5 V or 12 V blown fuse signal is not detected during serial initial communication. | | M8 (ADU conveyance) |
| | | F93-03 | When M8 (ADU conveyance) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. | If there is a paper in copying process when this trouble occurs, the machine stops after completion of paper ejection. RL1(main) is turned OFF. | M7 (ADU reverse) |
| | | F93-04 | When M7 (ADU reverse) which has been OFF is turned ON, a trouble detection signal (blown fuse) is detected. | | |
| | | F93-05 | A trouble detection signal (solenoid/blown motor fuse) is detected at the time of start. A trouble detection signal (24 V off) is detected. | The machine stops immediately and RL1 (main) is turned off. | Solenoids Motors |
| | | F93-06 | A trouble detection signal (solenoid/blown motor fuse) is detected at the time of start. A trouble detection signal (24 V off) is not detected. | | |

When any one of the following abnormality occurs, the user can disconnect the faulty unit temporarily. When a warning code is displayed, press the RESET button and turning the main switch OFF/ON according to the LCD message allows you to use the machine until you turn the main switch OFF/ON again.

| Warning code | Cause | Unit to be disconnected |
|--------------|----------------------------------|-------------------------|
| F18-10 | Tray 1 lifting abnormality | Tray 1 |
| F18-20 | Tray 2 lifting abnormality | Tray 2 |
| F18-30 | Tray 3 lifting abnormality | Tray 3 |
| F13-02 | LT paper feed motor abnormality | Tray 4 |
| F18-40 | Tray 4 (LCT) lifting abnormality | |
| F46-40 to 43 | HDD abnormality | HDD |
| F67-01 to 08 | DF drive abnormality | RADF |
| F77-24 to 26 | Folding/stapling abnormality | Folding/stapling unit |
| F77-31 to 37 | Trimmer drive abnormality | TU |
| F77-41 | PI abnormality | PI |

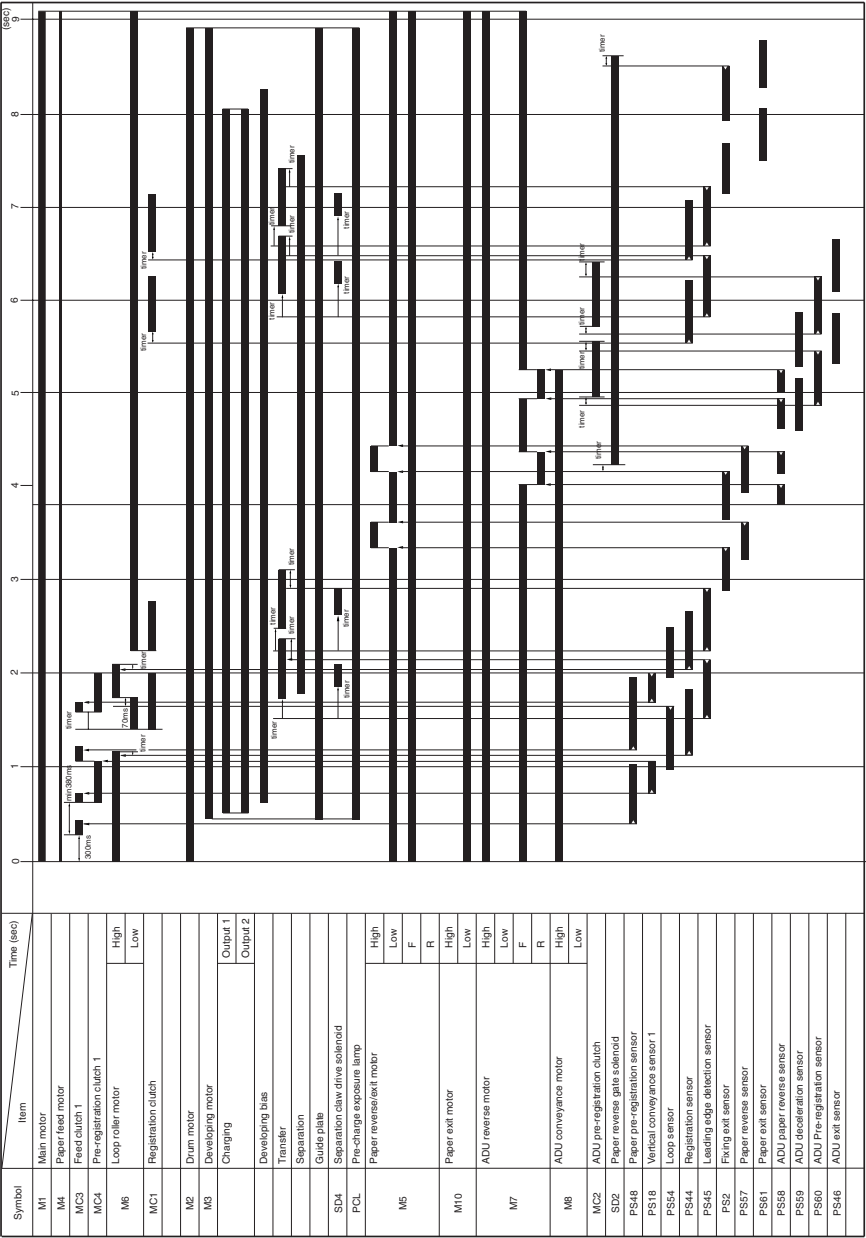
Di750 TIMING CHART (A4 or 8.5 x 11, LIFE SIZE,
TWO ORIGINALS, TWO SHEETS SET, TRAY 1)



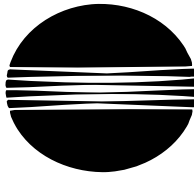
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TIMING CHART

Di750 TIMING CHART (8.5 x 11, LIFE SIZE, TWO ORIGINALS, TWO SHEETS SET, TRAY 1)



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